108TH CONGRESS
1st Session
HOUSE OF REPRESENTATIVES
REPT. 108–405
Part 1

FEDERAL AVIATION ADMINISTRATION RESEARCH AND DEVELOPMENT REAUTHORIZATION ACT

DECEMBER 8, 2003.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. BOEHLERT, from the Committee on Science, submitted the following

R E P O R T

[To accompany H.R. 2734]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, to whom was referred the bill (H.R. 2734) to authorize appropriations for the civil aviation research and development projects and activities of the Federal Aviation Administration, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

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29–006

I. AMENDMENT

The amendment is as follows:
Strike all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the "Federal Aviation Administration Research and Development Reauthorization Act".

SEC. 2. AUTHORIZATION OF APPROPRIATIONS.

Section 48102(a) of title 49, United States Code, is amended—

(1) by striking "to carry out sections 44504" and inserting "for conducting civil aviation research and development under sections 44504";

(2) by striking "and" at the end of paragraph (7);

(3) by striking the period at the end of paragraph (8) and inserting a semicolon; and

(4) by adding at the end the following new paragraphs:

"(9) for fiscal year 2004, $371,317,000, including—

"(A) $190,000,000 for Research, Engineering, and Development, of which—

"(i) $65,000,000 shall be for Improving Aviation Safety;

"(ii) $24,000,000 shall be for Weather Safety Research;

"(iii) $15,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

"(iv) $27,500,000 shall be for Human Factors and Aeromedical Research;

"(v) $30,000,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;

"(vi) $7,000,000 shall be for Research Mission Support;

"(vii) $20,000,000 shall be for the Airport Cooperative Research Program; and

"(viii) $1,500,000 shall be for carrying out subsection (h) of this section;

"(B) $163,900,000 for Facilities and Equipment, of which—

"(i) $42,800,000 shall be for Advanced Technology Development and Prototyping;

"(ii) $30,300,000 shall be for Safe Flight 21; and

"(iii) $90,800,000 shall be for the Center for Advanced Aviation System Development; and

"(C) $17,417,000 for Airport Improvement Program Research and Development, of which—

"(i) $9,667,000 shall be for Airports Technology-Safety; and

"(ii) $7,750,000 shall be for Airports Technology-Efficiency;

"(10) for fiscal year 2005, $396,192,000, including—

"(A) $206,600,000 for Research, Engineering, and Development, of which—

"(i) $65,705,000 shall be for Improving Aviation Safety;

"(ii) $24,260,000 shall be for Weather Safety Research;

"(iii) $30,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

"(iv) $27,800,000 shall be for Human Factors and Aeromedical Research;

"(v) $30,109,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;

"(vi) $7,076,000 shall be for Research Mission Support;

"(vii) $20,000,000 shall be for the Airport Cooperative Research Program; and

"(viii) $1,650,000 shall be for carrying out subsection (h) of this section;

"(B) $172,000,000 for Facilities and Equipment, of which—
"(i) $43,300,000 shall be for Advanced Technology Development and Prototyping;
"(ii) $31,100,000 shall be for Safe Flight 21;
"(iii) $95,400,000 shall be for the Center for Advanced Aviation System Development; and
"(iv) $2,200,000 shall be for Free Flight Phase 2; and
"(C) $17,592,000 for Airport Improvement Program Research and Development, of which—
"(i) $9,764,000 shall be for Airports Technology-Safety; and
"(ii) $7,828,000 shall be for Airports Technology-Efficiency; and
"(11) for fiscal year 2006, $412,157,000, including—
"(A) $228,289,000 for Research, Engineering, and Development, of which—
"(i) $66,447,000 shall be for Improving Aviation Safety;
"(ii) $24,534,000 shall be for Weather Safety Research;
"(iii) $50,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;
"(iv) $28,114,000 shall be for Human Factors and Aeromedical Research;
"(v) $30,223,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;
"(vi) $7,156,000 shall be for Research Mission Support;
"(vii) $20,000,000 shall be for the Airport Cooperation Research Program; and
"(viii) $1,815,000 shall be for carrying out subsection (h) of this section;
"(B) $166,100,000 for Facilities and Equipment, of which—
"(i) $42,200,000 shall be for Advanced Technology Development and Prototyping;
"(ii) $23,900,000 shall be for Safe Flight 21; and
"(iii) $100,000,000 shall be for the Center for Advanced Aviation System Development; and
"(C) $17,768,000 for Airport Improvement Program Research and Development, of which—
"(i) $9,862,000 shall be for Airports Technology-Safety; and
"(ii) $7,906,000 shall be for Airports Technology-Efficiency.".

SEC. 3. NEXT GENERATION AIR TRAFFIC MANAGEMENT RESEARCH AND DEVELOPMENT JOINT PROGRAM OFFICE.

(a) ESTABLISHMENT.—There is established a Next Generation Air Traffic Management Research and Development Joint Program Office (referred to in this section as the "Office"). The Office shall be jointly managed by the Federal Aviation Administration and the National Aeronautics and Space Administration. The objective of the Office shall be to carry out research and development of an air traffic management system designed to meet national long-term aviation security, safety, and capacity needs.

(b) DIRECTOR AND DEPUTY DIRECTOR.—The Office shall be headed by a Director who shall be a senior executive of the Federal Aviation Administration. The Deputy Director shall be a senior executive of the National Aeronautics and Space Administration. Not later than 120 days after the date of enactment of this Act, the Administrators of the Federal Aviation Administration and the National Aeronautics and Space Administration shall jointly appoint the Director and Deputy Director of the Office.

(c) FUNCTIONS OF THE OFFICE.—The Office shall manage air traffic management research and development programs and initiatives within the Federal Aviation Administration and the National Aeronautics and Space Administration. The responsibilities of the Office shall include—

(1) establishing and managing a research and development program for a next generation air traffic management system capable of tripling capacity by the year 2025;

(2) entering into grants, cooperative agreements or contracts, or otherwise awarding or using funds appropriated for air traffic management research and development to carry out paragraph (1);

(3) utilizing the facilities, capabilities, expertise, and experience of Federal agencies, national laboratories, universities, nonprofit organizations, industrial entities, and other non-Federal entities to carry out paragraph (1);

(4) coordinating with the Department of Defense, the Department of Commerce, the Under Secretary for Science and Technology at the Department of Homeland Security, the National Security Council, the Department of Transportation, and other Federal agencies; and

(5) consulting with the private sector (including representatives of general aviation, commercial aviation, and the space industry), members of the public, and other interested parties on the program.

(d) NEXT GENERATION AIR TRAFFIC MANAGEMENT RESEARCH AND DEVELOPMENT PLAN.—

(1) REQUIREMENT.—The Office shall develop a research and development plan to carry out this section.

(2) GOAL.—The goal of the plan shall be to enable the creation of a National Airspace System architecture that would—

(A) be based on emerging ground-based and space-based communications, navigation, and surveillance technologies;

(B) increase the level of safety, security, and efficiency of the National Airspace System;

(C) integrate data and information flow effectively with other Federal agencies responsible for providing for our Nation's defense and security;

(D) be scalable to accommodate and encourage substantial growth in domestic and international transportation;

(E) anticipate and accommodate continuing technology upgrades;

(F) accommodate a wide range of aircraft operations, including airlines, air taxis, helicopters, general aviation, and unmanned aerial vehicles; and

(G) incorporate noise pollution reduction concerns.

(3) CONTENTS.—The plan shall describe, at a minimum—

(A) the most significant technical hurdles that stand in the way of achieving the goal described in paragraph (2);

(B) the research and development projects that will be carried out to overcome the technical hurdles described in subparagraph (A), including, for each project, whether it would be funded by the Federal Aviation Administration, the National Aeronautics and Space Administration, or both, and whether the work would be carried by the Federal Government, corporations, or universities, or a combination thereof;

(C) the annual anticipated cost of carrying out the plan;

(D) the technical milestones that will be used to evaluate progress in carrying out the plan; and

(E) how the research and development activities will be coordinated with other appropriate Federal agencies.

(e) REPORTS.—The Director of the Office shall transmit to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate—

(1) not later than 120 days after the date of enactment of this Act, the plan required under subsection (d); and

(2) annually at the time of the President's budget request, a report describing the progress in carrying out the plan required under subsection (d) and any changes to that plan.

SEC. 4. BUDGET DESIGNATION FOR RESEARCH AND DEVELOPMENT ACTIVITIES.

Section 48102 of title 49, United States Code, is amended by inserting after subsection (f) the following new subsection:

"(g) DESIGNATION OF ACTIVITIES.—(1) The amounts appropriated under subsection (a) are for the support of all research and development activities carried out by the Federal Aviation Administration that fall within the categories of basic research, applied research, and development, including the design and development of prototypes, in accordance with the classifications of the Office of Management and Budget Circular A–11 (Budget Formulation/Submission Process).

"(2) The Department of Transportation's annual budget request for the Federal Aviation Administration shall identify all of the activities carried out by the Administration within the categories of basic research, applied research, and development, as classified by the Office of Management and Budget Circular A–11. Each activity in the categories of basic research, applied research, and development shall be identified regardless of the budget category in which it appears in the budget request.".

SEC. 5. AIRPORT COOPERATIVE RESEARCH PROGRAM.

Section 44511 of title 49, United States Code, is amended by adding at the end the following new subsection:

"(f) AIRPORT COOPERATIVE RESEARCH PROGRAM.—

"(1) ESTABLISHMENT.—The Secretary of Transportation shall establish an airport cooperative research program to—

"(A) identify problems that are shared by airport operating agencies and can be solved through applied research but that are not being adequately addressed by existing Federal research programs; and

"(B) fund research to address those problems.

"(2) GOVERNANCE.—The Secretary of Transportation shall appoint an independent governing board for the research program established under this subsection. The governing board shall be appointed from candidates nominated by national associations representing public airport operating agencies, airport executives, State aviation officials, and the scheduled airlines, and shall include representatives of appropriate Federal agencies. Section 14 of the Federal Advisory Committee Act shall not apply to the governing board.

"(3) IMPLEMENTATION.—The Secretary of Transportation shall enter into an arrangement with the National Academy of Sciences to provide staff support to the governing board established under paragraph (2) and to carry out projects proposed by the governing board that the Secretary considers appropriate.".

SEC. 6. DEVELOPMENT OF ANALYTICAL TOOLS AND CERTIFICATION METHODS.

The Federal Aviation Administration shall conduct research to promote the development of analytical tools to improve existing certification methods and to reduce the overall costs for the certification of new products.

SEC. 7. RESEARCH ON AVIATION TRAINING.

Section 48102(h)(1) of title 49, United States Code, is amended—

(1) by striking "or" at the end of subparagraph (B);

(2) by striking the period at the end of subparagraph (C) and inserting "; or"; and

(3) by adding at the end the following new subparagraph:

"(D) research on the impact of new technologies and procedures, particularly those related to aircraft flight deck and air traffic management functions, on training requirements for pilots and air traffic controllers.".

SEC. 8. ROTORCRAFT RESEARCH AND DEVELOPMENT INITIATIVE.

(a) OBJECTIVE.—The Administrator of the Federal Aviation Administration shall establish a rotorcraft initiative with the objective of developing, and demonstrating in a relevant environment, within 10 years after the date of the enactment of this Act, technologies to enable rotorcraft with the following improvements relative to rotorcraft existing as of the date of the enactment of this Act:

(1) 80 percent reduction in noise levels on takeoff and on approach and landing as perceived by a human observer.

(2) Factor of 10 reduction in vibration.

(3) 30 percent reduction in empty weight.

(4) Predicted accident rate equivalent to that of fixed-wing aircraft in commercial service within 10 years after the date of the enactment of this Act.

(5) Capability for zero-ceiling, zero-visibility operations.

(b) IMPLEMENTATION.—Within 180 days after the date of the enactment of this Act, the Administrator of the Federal Aviation Administration, in cooperation with the Administrator of the National Aeronautics and Space Administration, shall provide a plan to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate for the implementation of the initiative described in subsection (a). The implementation plan shall include—

(1) technological roadmaps for achieving each of the improvements specified in subsection (a);

(2) an estimate of the 10-year funding profile required to achieve the objective specified in subsection (a);

(3) a plan for carrying out a formal quantification of the estimated costs and benefits of each technological option selected for development beyond the initial concept definition phase;

(4) a plan for transferring the technologies to industry, including the identification of requirements for prototype demonstrations, as appropriate;

(5) a plan to perform rotorcraft system architecture studies to identify revolutionary technologies for future investments in research and development; and

(6) a plan to increase the use of vertical-take-off-and-landing vehicles to improve transportation service in urban areas.

(c) FUNDING AGREEMENTS.—The Administrator of the Federal Aviation Administration shall enter into appropriate funding agreements with other Federal agencies

and departments linked to national rotorcraft industry and academic research and development.

(d) CENTER FOR ROTORCRAFT TECHNOLOGY.—The Federal Aviation Administration is authorized to contribute up to $5,000,000 for the operation of a center for rotorcraft technology to house a research, testing, and training facility and administrative center in the vicinity of existing helicopter manufacturing and research for the purpose of improving upon and developing new rotorcraft technologies, new design capabilities, and manufacturing techniques, including the objectives described in subsection (a), led by helicopter manufacturers, the maintenance industry, retrofitters, universities, and industry suppliers.

(e) AUTHORIZATION OF APPROPRIATIONS.—In addition to amounts authorized to be appropriated by the amendments made by this Act, there are authorized to be appropriated to the Administrator of the Federal Aviation Administration to carry out this section—

(1) $40,000,000 for fiscal year 2004;
(2) $40,000,000 for fiscal year 2005;
(3) $40,000,000 for fiscal year 2006;
(4) $50,000,000 for fiscal year 2007; and
(5) $70,000,000 for fiscal year 2008.

SEC. 9. PILOT RETIREMENT AGE STUDY.

The Administrator of the Federal Aviation Administration shall conduct a research study of whether commercial airline pilots between the ages of 60 and 64 who are employed by foreign air carriers pose a significant safety risk to United States passengers and airspace. The Administrator shall transmit the results of the study to the Congress not later than 6 months after the date of the enactment of this Act.

II. PURPOSE OF THE BILL

The purpose of the bill is to authorize the Federal Aviation Administration (FAA) to conduct research and development activities for Fiscal Years (FY) 2004, 2005, and 2006. The funds authorized by this bill are aimed at improving the national airspace system by increasing its safety, security, capacity, and productivity to meet expected air traffic demands of the future.

III. BACKGROUND AND NEED FOR THE LEGISLATION

The FAA was created to develop air commerce and promote safety in the air. As part of the Airport Development and Airway Trust fund established by Congress in 1982, a comprehensive research and development program was put in place to maintain a safe, efficient air traffic control system.

The 100th Congress, seeking to strengthen FAA's research and development programs, enacted the 1988 Aviation Safety Research Act (P.L. 100–591), creating the FAA Research Advisory Board. The terrorist bombing of Pan Am Flight 103 demonstrated the need for new technology to detect explosives, and Congress subsequently passed the Aviation Security Improvement Act of 1990 (P.L. 101–604), which required FAA to support activities to accelerate the research and development of new technologies to protect against terrorism. Most of this program was later transferred to the Transportation Security Administration.

Funding for FAA research and development activities was authorized for Fiscal Years 1999, 2000, 2001 and 2002 through P.L. 106–181.

IV. SUMMARY OF HEARINGS

On March 6, 2003, the Subcommittee on Space and Aeronautics held a hearing on civil aeronautics research and development budget requests for the Federal Aviation Administration (and the Na-

tional Aeronautics and Space Administration) for Fiscal Year 2004, as well as their long-term plans for research and development.

Mr. Charlie Keegan, Associate Administrator for Research and Acquisitions, Federal Aviation Administration, testified that the agency's major research and development programs and plans are described in the FAA's National Aviation Research Plan. He stated that FAA's research and development budget request for $100 million for the Research, Engineering and Development account for Fiscal Year 2004 was $24 million below the current fiscal year's level. He also noted that FAA's research and development program requested $73 million from the Facilities and Equipment account, and $17.4 million from the Airport Improvement Program account. He stated that one of the most valuable collaborations with industry is the Research, Engineering and Development Advisory Committee (REDAC), comprising industry, government and academic experts in the field of aviation. Mr. Keegan also highlighted two successful new safety technologies developed by the FAA, a fuel tank inerting system to make fuel tanks safer and a runway overrun arrestor bed material to aid in stopping runaway aircraft.

Dr. John Hansman, Professor of Aeronautics and Astronautics at the Massachusetts Institute of Technology, testified that FAA's R&D funding was inadequate to meet projected demand in the National Airspace System (NAS). He stated that the current air traffic control system is "on the edge of a capacity crisis," and that once the economy rebounds, the performance of our National Airspace System will degrade. He also stated that FAA (and NASA) need a stronger base research program in fundamental aspects of air traffic management, and that as a nation, we need to provide appropriate resources and coordination between various agencies.

Mr. Malcolm Armstrong, Senior Vice President, Air Transport Association, highlighted the precarious financial condition of the commercial air carrier industry. He stated that safety remains the industry's number one goal, and noted that during the previous calendar year, scheduled domestic air carriers suffered no fatal accidents. He testified that FAA's current air traffic management program, the Operational Evolution Plan, will not provide sufficient capacity to meet projected demands. Mr. Armstrong expressed the industry's belief that the next air traffic management system will be highly automated. He also reiterated a recommendation made by the Commission on the Future of the United States Aerospace Industry that FAA should provide incentives to help the air carrier industry absorb the costs of re-equipping their fleets with new avionics systems that will be required to operate in the next generation air traffic management system.

V. Committee Actions

The Space and Aeronautics Subcommittee marked up the Committee Print of the "Federal Aviation Administration Research and Development Reauthorization Act" on June 26, 2003. The legislation was adopted, as amended (by voice vote) and ordered reported to the full Committee. Amendments to the legislation were offered in the following order:

1. Amendment offered by Mr. Gordon to update the Research Grants Program to highlight the importance of research on the impact of new technologies and procedures on the training require-

ments for pilots and air traffic controllers, and to authorize funding to support this research. The amendment also extends funding of the Research Grants Program for three years. The amendment was adopted by voice vote.

2. Amendment offered by Mr. Weiner to authorize a $20 million noise and emissions research funding program in the Research, Engineering and Development account, and to strike a provision in the Committee Print authorizing this activity from the Airport Improvement Program account. The amendment was adopted by voice vote.

3. Amendment offered by Subcommittee Chairman Rohrabacher on behalf of Mr. Boehlert, to direct the National Academy of Sciences to provide staff and administrative support to the governing board of the Airport Cooperative Research Program. The amendment was adopted by voice vote.

Following Subcommittee markup, Representative Randy Forbes introduced the bill with bipartisan support on July 15, 2003, which was designated H.R. 2734. The full Committee met on Tuesday, July 22, 2003, to consider H.R. 2734. The bill was adopted, as amended (by voice vote) and ordered reported to the House. Amendments were offered in the following order:

1. Amendment offered by Mr. Matheson to add, as a new criterion, consideration of noise pollution reduction to the Next Generation Air Traffic Management—Joint Program Office research plan. The amendment was adopted by voice vote.

2. Amendment offered by Representative Curt Weldon to authorize a rotorcraft research and development program to: reduce rotorcraft noise levels on takeoff and approach and landing; to reduce vibration; to reduce empty weight; to reduce the accident rate; and to develop the capability of flying in instrument weather conditions. The amendment authorizes $240 million over five years (FY04–FY08). The amendment was adopted by voice vote.

3. Amendment offered by Ms. Jackson-Lee to require the FAA to conduct a research study on whether commercial airline pilots between the ages of 60 and 64, who fly for foreign commercial air carriers, pose a significant safety risk to U.S. passengers and airspace. The FAA is directed to transmit a report to Congress not later than six months after the date of enactment. The amendment was adopted by voice vote.

VI. Summary of Major Provisions of the Bill

- Reauthorizes the FAA's Research and Development program for FY04, FY05, and FY06.
- Establishes an FAA-NASA Next Generation Air Traffic Management Joint Program Office. Requires a research and development plan that will enable development of an air traffic management system capable of tripling capacity by the year 2025. Authorizes a total of $95 million from FY04 through FY06 .
- Amends Section 48102 of Title 49, United States Code, to clarify that amounts appropriated under this subsection support all research and development activities carried out by FAA.
- Establishes an Airport Cooperative Research Program. Authorizes $20 million annually.

• Requires FAA to conduct research on development of analytical tools to held reduce the cost of certifying new aircraft, aircraft engines, and related systems.
• Establishes a research program to reduce community exposure to aircraft noise and emissions. Authorizes $20 million annually.
• Authorizes FAA to establish a rotorcraft research and development program.

VII. Section-by-Section Analysis (by Title and Section)

Sec. 1. Short Title

"Federal Aviation Administration Research and Development Reauthorization Act."

Sec. 2. Authorization of Appropriations

Authorizes appropriations for Federal Aviation Administration (FAA) Research and Development programs, projects and activities.

[In millions of dollars]

Program account	FY03 actual	FY04 request	FY04 auth.	FY05 auth.	FY06 auth.
Research, Engineering & Development	$147.5	$100.0	$190.0	$206.6	$228.3
Facilities and Equipment*	177.5	163.9	163.9	172.0	166.1
Airport Improvement Program*	0.0	17.4	17.4	17.6	17.7
Total	325.0	281.3	371.3	396.2	412.1

*Research and development projects and activities only.

Sec. 3. Next Generation Air Traffic Management Research and Development Joint Program Office

Requires FAA and the National Aeronautics and Space Administration (NASA) to establish a Joint Program Office (JPO) to conduct Next Generation Air Traffic Management research and development. Requires the FAA and NASA Administrators to jointly appoint an FAA senior executive to be Director, and a NASA senior executive to be Deputy Director.

Requires the JPO to establish and carry out, on behalf of FAA and NASA, long-term air traffic management research and development capable of tripling our domestic capacity by 2025. The JPO is authorized to spend agency funds dedicated to air traffic management research and development on behalf of NASA and FAA. Authorizes the JPO to use the facilities and expertise of other Federal agencies, national laboratories, universities, non-profit organizations, and private sector entities.

Requires the JPO to develop a research and development plan with cost and schedule milestones. Requires the JPO to make an annual report to Congress on progress to date, and program plans for the following year.

Authorizes a total of $95 million.

Sec. 4. Budget Designation for Research and Development Activities

Amends 49 USC 48102 (FAA Research and Development), to require future FAA budgets to identify all research and development activities that would be classified as basic research, applied research, or development under the guidelines established by the Office of Management and Budget Circular A–11, regardless of the budget category in which they appear in the budget request.

Sec. 5. Airport Cooperative Research Program

Requires the Secretary of Transportation to establish an airport cooperative research grant program to identify problems—shared by airport operating agencies—that can be solved through applied research, and to fund research addressing those problems.

Requires the Secretary to appoint a governing board from candidates proposed by national associations representing airport executives, public airport operating agencies, State aviation officials, and the scheduled airlines. The board will solicit, review and propose airport research and development projects. The Secretary will review and approve projects for funding.

Authorizes $20 million annually from the Research, Engineering and Development account.

Sec. 6. Development of Analytical Tools and Certification Methods

Directs FAA to conduct research to promote development of analytical tools to improve existing certification methods for new aircraft, engines, and aircraft systems, to reduce overall certification costs for new products.

Sec. 7. Research Program to Reduce Community Exposure to Aircraft Noise and Emissions

Establishes a program to fund research and development of noise and emissions reduction technologies. Authorizes $20 million annually from the Airport Improvement Program.

Sec. 8. Rotorcraft Research and Development Initiative

Directs the FAA Administrator to establish a rotorcraft initiative with the objective of developing and demonstrating technologies, within ten years, to enable the following performance enhancements over state-of-the-art rotorcraft: an 80 percent reduction in noise levels on take and on approach and landing; a factor of 10 reduction in vibration; a 30 percent reduction in empty weight; a predicted accident rate to that of fixed-wing aircraft in commercial service; and the capability of operating in instrument meteorological conditions.

Requires the FAA Administrator, in cooperation with NASA, to provide an implementation plan to the House Science Committee, and the Senate Commerce, Science and Transportation Committee, within 180 days.

Authorizes FAA to contribute up to $5 million for the operation of a center for rotorcraft technology.

Authorizes a total of $240 million over five fiscal years (FY04–FY08).

Sec. 9. Pilot Retirement Age Study

Directs the FAA Administrator to conduct a research study of whether commercial airline pilots between the ages of 60 and 64, who fly for foreign commercial air carriers, pose a significant safety risk to U.S. passengers and airspace. The report shall be transmitted to Congress not later than 180 days after the date of enactment.

VIII. COMMITTEE VIEWS

Research and Development Funding. The bill authorizes appropriations for all of FAA's research and development activities. Currently, these activities are funded from two of the agency's four major appropriations accounts: the Research, Engineering and Development (R,E&D) account; and the Facilities and Equipment (F&E) account. For Fiscal Year 2004, FAA also proposed two airport R&D activities for funding through the Airport Improvement Program account,[1] and proposed to fund a commercial space transportation safety project through the Operations Account.

FAA's annual plan for research and development, The National Aviation Research Plan (NARP), which is statutorily mandated and required to include all of FAA's research and development activities, was used by the Committee as the basis for this authorization. The Facilities and Equipment projects listed in the NARP, and authorized in the bill are: Safe Flight 21; Free Flight Phase 2; the Center for Advanced Aviation System Development; and Advanced Technology Development and Prototyping. Advanced Technology Development and Prototyping is a collection of 13 distinct activities in the agency's FY04 budget proposal that support air traffic services. They are: Runway Incursion; Aviation System Capacity Improvement; Separation Standards; Airspace Management Laboratory; General Aviation and Vertical Flight Technology Program; Operational Concept Validation; Software Engineering; National Airspace System (NAS) Requirements Development; Domestic Reduced Vertical Separation Minima; Cyber Security for NAS Development; Safer Skies; NAS Safety Assessment; and Required Navigation Performance.

The dispersion of R&D projects and activities across FAA accounts is a recent change. Prior to FY99, agency research and development was funded primarily within the R,E&D account, one important exception being the Center for Advanced Aviation System Development. In FY99, the Congressional appropriations process resulted in a shifting of $52.6 million from the R,E&D account to the Facilities and Equipment account by creating the Advanced Technology Development and Prototyping program. Over time this migration of research and development funding has become more pronounced, with the FY04 budget proposing more funding out of F&E, Operations, and Airport Improvement accounts than out of R,E&D.

The Committee believes that all research and development funding should be provided within the Research, Engineering and Development account. Until that goal is accomplished, the Committee will continue vigorous oversight and management of research and development programs, projects and activities wherever they may reside within the agency's budget. To that end, the Committee expects the NARP to describe all FAA research and development activities that fall within the categories of basic research, applied research, and development, including the design and development of prototypes, in accordance with the classifications of the Office of Management and Budget Circular A–11 (Budget Formulation/Submission Process).

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[1] The two projects are: Airports Technology—Safety; and Airports Technology—Efficiency.

Next Generation Air Traffic Management Research and Development Joint Program Office. The FAA serves a unique role in government as manager and operator of a highly integrated communications, navigation, and surveillance system that provides air traffic separation services 24 hours a day, 365 days a year. Without FAA, our national airspace system could not function.

The Committee is concerned that FAA is not moving aggressively to research and develop enabling technologies to address long-term (beyond the year 2015) air traffic management (ATM) demand. Further, the Committee is concerned that FAA alone does not have the research capabilities to undertake this effort.

In testimony delivered before the Committee in this and previous Congresses, expert witnesses have raised concerns that the current air traffic management system will not be able to accommodate the level of traffic projected after the year 2015. Today, FAA has a capacity enhancement program in place, called the Operational Evolution Plan (OEP), that by most measures will result in a 30 percent gain in capacity, about enough to keep pace with predicted growth over the next decade. Traffic is then expected to outstrip capacity, and until a successor to the current air traffic management system is researched, developed, designed and built, the efficiency and financial health of the nation's system of airports and commercial air travel will be jeopardized.

The Committee expects the Next Generation Air Traffic Management Research and Development Joint Program Office (JPO) to closely integrate FAA's expertise with NASA's capabilities to conduct research and development to lay the foundation for a new operating paradigm. Toward that end, the JPO leadership will be jointly selected by the Administrators of FAA and NASA. The JPO is expected to manage all research and development activities at FAA and NASA related to air traffic management research and development. The Joint Program Office is expected to draw upon the talents—and integrate the requirements—of other Federal agencies that play a role in providing for domestic safety and security, including the Under Secretary for Science and Technology at the Department of Homeland Security, the National Security Council, the Department of Defense, the Department of Transportation, the Department of Commerce, and other appropriate Federal agencies. Finally, the Joint Program Office must ensure that private industry, including air carriers, general aviation, and aerospace manufacturers, are consulted as it moves forward to develop its research agenda.

The bill requires the JPO to develop a research plan, no later than 120 days following the date of enactment, that will provide the technologies to allow the Department of Transportation to request Congressional authorization for a future air traffic management system based on sound science, risk reduction, and technology validation. In developing the plan, the JPO should establish cost and schedule milestones against which progress can be measured.

Airport Cooperative Research Program. The Committee is concerned that the research needs of airports are not being addressed by current federal programs. Airports are struggling in today's business environment to comply with regulations promulgated by a number of federal agencies. Most airports are owned and oper-

ated by local governments and are expected to be financially self-sufficient. Generally, airport sponsors make no provision for additional resources to finance comprehensive research and development programs. Consequently, many airports have no research capability and must improvise or consult informally with other airport operators to gain an understanding of best practices to comply with federal requirements.

The Committee expects the Airport Cooperative Research Program to help airports comply with federal requirements through a well executed program of applied research. In establishing the Program, the Department of Transportation will appoint a governing board from representatives of airport operating agencies, airport executives, State aviation officials, scheduled air carriers, and appropriate federal agencies. The Department will enter into an arrangement with the National Academy of Sciences to staff and support the governing board. At a minimum, the Committee expects the Transportation Research Board (National Academy of Sciences) to annually issue a solicitation, on behalf of the governing board, for applied research proposals that will help large and small airports become more efficient and knowledgeable about compliance with federal safety, security, operating, and environmental requirements. Staff from the Transportation Research Board will evaluate each proposal and provide technical analysis on its relative merits and ensure that the proposal does not duplicate research that has been conducted—or is being conducted—in other venues. The Committee expects the governing board to make funding recommendations, based on staff analysis, to the Secretary for review. The Secretary will make final funding decisions. This cooperative research program model has been in use for 12 years at the Federal Transit Administration for the Transit Cooperative Research Program, and the Committee expects this same template to be applied to the airport community.

Research on Aviation Training. The Committee is concerned that continuing dramatic changes in both cockpit technologies and in air traffic management technologies will put unique demands on future training requirements. Research into the impact of new technologies and procedures on training requirements for pilots and air traffic controllers would be of enormous value.

The 1998 FAA R&D authorization bill created a research grants program for primarily undergraduate institutions of higher education. It directed the FAA Administrator to establish a program that would involve undergraduate and technical colleges in research on subjects relevant to the needs of the FAA. The Committee has updated this statute to highlight the importance of research on the impact of new technologies and procedures on the training requirements for pilots and air traffic controllers. In addition, the Committee extends the funding for the undergraduate research program for another three years.

The Committee expects FAA to use its new authority to aggressively conduct undergraduate university-based research. It is anticipated that FAA will leverage its funding through universities with undergraduate research programs focused on developing curriculum, teaching techniques and standards for pilots-in-training and for existing pilots to help them transition to new technologies.

Noise and Emissions Research. The Committee is concerned about the limited amount of Federal research investment dedicated to study quieter and cleaner turbine engine technologies, as well as airframe noise reduction. Today all aircraft flying in domestic airspace must be Stage 3 compliant. The FAA is now negotiating with our international aviation partners to develop even stricter noise and emissions standards, yet it spends no money in fundamental noise and emissions research. Private industry supports research in these areas, but does not have the financial capability to perform high-risk, long-term research. For Fiscal Year 2004, NASA is proposing to spend $60 million on its Quiet Aircraft Technology program.

The Committee expects FAA to use its new noise and emissions research authorization to supplement ongoing research now being conducted by NASA, at university laboratories, and by industry. FAA plays a vigorous regulatory role in this arena and the Committee believes it appropriate that FAA should also underwrite some of the costs associated with developing technology solutions. The Committee also believes noise and emissions research can produce technologies that will enhance the competitiveness of U.S.-manufactured aircraft in the important international marketplace.

Rotorcraft Research and Development Initiative. Rotorcraft represents a tremendous opportunity to solve airport and airway congestion. They can land and takeoff without having to rely on runways, and they can approach and depart airports independent of the flight paths used by fixed-wing aircraft. Rotorcraft can also operate from very small terminals (heliports) that would make them convenient to build in a number of urban settings.

However, rotorcraft still have a number of technological hurdles that must be overcome before they could find their way in the mainstream of air transportation vehicles. They're noisy and they have much higher operating costs than similarly-sized fixed-wing aircraft.

The Committee expects FAA to use this new R&D authority to aggressively pursue enabling technologies through in-house research facilities, or through contracts, grants or cooperative agreements with industry, university research facilities, and with other federal departments and agencies, including the National Aeronautics and Space Administration.

IX. Cost Estimate

A cost estimate and comparison prepared by the Director of the Congressional Budget Office under section 402 of the Congressional Budget Act of 1974 has been timely submitted to the Committee on Science prior to the filing of this report and is included in Section X of this report pursuant to House Rule XIII, clause 3(c)(3).

H.R. 2734 does not contain new budget authority, credit authority, or changes in revenues or tax expenditures. Assuming that the sums authorized under the bill are appropriated, H.R. 2734 does authorize additional discretionary spending, as described in the Congressional Budget Office report on the bill, which is contained in Section X of this report.

X. CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, July 25, 2003.

Hon. SHERWOOD L. BOEHLERT,
Chairman, Committee on Science,
House of Representatives, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 2734, the Federal Aviation Administration Research and Development Reauthorization Act.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Megan Carroll.

Sincerely,

ROBERT A. SUNSHINE
(For Douglas Holtz-Eakin, Director).

Enclosure.

H.R. 2734—Federal Aviation Administration Research and Development Reauthorization Act

Summary: CBO estimates that H.R. 2734 would authorize the appropriation of about $1.5 billion over the 2004–2008 period for the Federal Aviation Administration's (FAA's) civil aviation research and development programs. Assuming appropriation of the authorized amounts, CBO estimates that implementing H.R. 2734 would cost nearly $1.5 billion over the 2004–2008 period. The bill would not affect direct spending or revenues.

H.R. 2734 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

Estimated cost to the Federal Government: For this estimate, CBO assumes that H.R. 2734 will be enacted by the end of fiscal year 2003 and that the specified and estimated authorization amounts will be provided for each year. Estimates of outlays are based on historical spending patterns for similar activities. The estimated budgetary impact of H.R. 2734 is shown in the following table. The costs of this legislation fall within budget function 400 (transportation).

	By fiscal year, in millions of dollars—					
	2003	2004	2005	2006	2007	2008
SPENDING SUBJECT TO APPROPRIATION						
Spending Under Current Law for FAA Research and Development:						
Budget Authority[1]	147	0	0	0	0	0
Estimated Outlays	180	80	26	5	0	0
Proposed Changes:						
Estimated Authorization Level	0	431	456	472	70	90
Estimated Outlays	0	151	335	483	355	148
Spending Under H.R. 2734 for FAA Research and Development:						
Estimated Authorization Level[1]	147	431	456	472	70	90
Estimated Outlays	180	231	361	488	355	148

[1] The 2003 level is the amount appropriated for that year for the FAA's civil aviation research and development programs.

Basis of estimate: H.R. 2734 would authorize the appropriation of $371 million in 2004 and about $1.2 billion over the 2004–2006

period for civil aviation research and development programs administered by the FAA. Those amounts include $15 million in 2004 and $95 million over the 2004–2006 period for a new office to coordinate certain research and development projects carried out by the FAA and the National Aeronautics and Space Administration. Based on information from the FAA, CBO estimates that outlays for those programs would total $130 million in 2004 and roughly $1.2 billion over the next five years.

The bill also would authorize the appropriation of $40 million in 2004 and $240 million over the 2004–2008 period for a new program to enhance rotocraft technology. (A rotocraft is a type of aircraft that uses rotary wings to take off and land vertically.) Based on information from the FAA, CBO estimates the proposed program would cost $14 million in 2004 and $203 million over the next five years.

Finally, H.R. 2734 would require the Secretary of Transportation to establish a research program to identify and address problems faced by airport operators that are not sufficiently studied through FAA's existing research and development activities. Based on information from the FAA and assuming appropriation of the necessary amounts, CBO estimates that the new program would cost $7 million in 2004 and $89 million over the 2004–2008 period.

Intergovernmental and private-sector impact: H.R. 2734 contains no intergovernmental or private-sector mandates as defined in UMRA, and would impose no costs on state, local, or tribal governments.

Estimate prepared by: Federal Costs: Megan Carroll; Impact on State, Local, and Tribal Governments: Theresa Gullo; and Impact on the Private Sector: Jean Talarico.

Estimate approved by: Peter H. Fontaine, Deputy Assistant Director for Budget Analysis.

XI. Compliance With Public Law 104–4 (Unfunded Mandates)

H.R. 2734 contains no unfunded mandates.

XII. Committee Oversight Findings and Recommendations

The Committee on Science's oversight findings and recommendations are reflected in the body of this report.

XIII. Statement on General Performance Goals and Objectives

Pursuant to clause 3(c) of House rule XIII, the goals of H.R. 2734 are to authorize appropriations for the research and development activities of the Federal Aviation Administration for fiscal years 2004 through 2006; to establish a Next Generation Air Traffic Management Research and Development Joint Program Office; to establish an Airport Cooperative Research Program; to establish a Rotorcraft Research and Development Initiative; to study of the age 60 retirement rule imposed on commercial airline pilots; and to study the impact of new technologies and procedures on training requirements for pilots and air traffic controllers.

XIV. CONSTITUTIONAL AUTHORITY STATEMENT

Article I, section 8 of the Constitution of the United States grants Congress the authority to enact H.R. 2734.

XV. FEDERAL ADVISORY COMMITTEE STATEMENT

H.R. 2734 does not establish nor authorize the establishment of any advisory committee.

XVI. CONGRESSIONAL ACCOUNTABILITY ACT

The Committee finds that H.R. 2734 does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104–1).

XVII. STATEMENT ON PREEMPTION OF STATE, LOCAL, OR TRIBAL LAW

This bill is not intended to preempt any state, local, or tribal law.

XVIII. CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3(e) of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

TITLE 49, UNITED STATES CODE

* * * * * * *

SUBTITLE VII—AVIATION PROGRAMS

* * * * * * *

PART A—AIR COMMERCE AND SAFETY

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SUBPART III—SAFETY

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CHAPTER 445—FACILITIES, PERSONNEL, AND RESEARCH

§ 44511. Aviation research grants

(a) * * *

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(f) AIRPORT COOPERATIVE RESEARCH PROGRAM.—

(1) ESTABLISHMENT.—The Secretary of Transportation shall establish an airport cooperative research program to—

(A) identify problems that are shared by airport operating agencies and can be solved through applied research

but that are not being adequately addressed by existing Federal research programs; and

(B) fund research to address those problems.

(2) GOVERNANCE.—The Secretary of Transportation shall appoint an independent governing board for the research program established under this subsection. The governing board shall be appointed from candidates nominated by national associations representing public airport operating agencies, airport executives, State aviation officials, and the scheduled airlines, and shall include representatives of appropriate Federal agencies. Section 14 of the Federal Advisory Committee Act shall not apply to the governing board.

(3) IMPLEMENTATION.—The Secretary of Transportation shall enter into an arrangement with the National Academy of Sciences to provide staff support to the governing board established under paragraph (2) and to carry out projects proposed by the governing board that the Secretary considers appropriate.

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PART C—FINANCING

CHAPTER 481—AIRPORT AND AIRWAY TRUST FUND AUTHORIZATIONS

* * * * * * *

§ 48102. Research and development

(a) AUTHORIZATION OF APPROPRIATIONS.—Not more than the following amounts may be appropriated to the Secretary of Transportation out of the Airport and Airway Trust Fund established under section 9502 of the Internal Revenue Code of 1986 (26 U.S.C. 9502) **[**to carry out sections 44504**]** *for conducting civil aviation research and development under sections 44504*, 44505, 44507, 44509, and 44511–44513 of this title:

(1) * * *

* * * * * * *

(7) for fiscal year 2001, $237,000,000; **[**and**]**

(8) for fiscal year 2002, $249,000,000**[**.**]***;*

(9) for fiscal year 2004, $371,317,000, including—

(A) $190,000,000 for Research, Engineering, and Development, of which—

(i) $65,000,000 shall be for Improving Aviation Safety;

(ii) $24,000,000 shall be for Weather Safety Research;

(iii) $15,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

(iv) $27,500,000 shall be for Human Factors and Aeromedical Research;

(v) $30,000,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;

(vi) $7,000,000 shall be for Research Mission Support;

(vii) $20,000,000 shall be for the Airport Cooperative Research Program; and

(viii) $1,500,000 shall be for carrying out subsection (h) of this section;

(B) $163,900,000 for Facilities and Equipment, of which—

(i) $42,800,000 shall be for Advanced Technology Development and Prototyping;

(ii) $30,300,000 shall be for Safe Flight 21; and

(iii) $90,800,000 shall be for the Center for Advanced Aviation System Development; and

(C) $17,417,000 for Airport Improvement Program Research and Development, of which—

(i) $9,667,000 shall be for Airports Technology-Safety; and

(ii) $7,750,000 shall be for Airports Technology-Efficiency;

(10) for fiscal year 2005, $396,192,000, including—

(A) $206,600,000 for Research, Engineering, and Development, of which—

(i) $65,705,000 shall be for Improving Aviation Safety;

(ii) $24,260,000 shall be for Weather Safety Research;

(iii) $30,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

(iv) $27,800,000 shall be for Human Factors and Aeromedical Research;

(v) $30,109,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;

(vi) $7,076,000 shall be for Research Mission Support;

(vii) $20,000,000 shall be for the Airport Cooperative Research Program; and

(viii) $1,650,000 shall be for carrying out subsection (h) of this section;

(B) $172,000,000 for Facilities and Equipment, of which—

(i) $43,300,000 shall be for Advanced Technology Development and Prototyping;

(ii) $31,100,000 shall be for Safe Flight 21;

(iii) $95,400,000 shall be for the Center for Advanced Aviation System Development; and

(iv) $2,200,000 shall be for Free Flight Phase 2; and

(C) $17,592,000 for Airport Improvement Program Research and Development, of which—

(i) $9,764,000 shall be for Airports Technology-Safety; and

(ii) $7,828,000 shall be for Airports Technology-Efficiency; and

(11) for fiscal year 2006, $412,157,000, including—

(A) $228,289,000 for Research, Engineering, and Development, of which—

(i) $66,447,000 shall be for Improving Aviation Safety;

(ii) $24,534,000 shall be for Weather Safety Research;

(iii) $50,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

(iv) $28,114,000 shall be for Human Factors and Aeromedical Research;

(v) $30,223,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;

(vi) $7,156,000 shall be for Research Mission Support;

(vii) $20,000,000 shall be for the Airport Cooperation Research Program; and

(viii) $1,815,000 shall be for carrying out subsection (h) of this section;

(B) $166,100,000 for Facilities and Equipment, of which—

(i) $42,200,000 shall be for Advanced Technology Development and Prototyping;

(ii) $23,900,000 shall be for Safe Flight 21; and

(iii) $100,000,000 shall be for the Center for Advanced Aviation System Development; and

(C) $17,768,000 for Airport Improvement Program Research and Development, of which—

(i) $9,862,000 shall be for Airports Technology-Safety; and

(ii) $7,906,000 shall be for Airports Technology-Efficiency.

* * * * * * *

(g) DESIGNATION OF ACTIVITIES.—(1) The amounts appropriated under subsection (a) are for the support of all research and development activities carried out by the Federal Aviation Administration that fall within the categories of basic research, applied research, and development, including the design and development of proto-

types, in accordance with the classifications of the Office of Management and Budget Circular A–11 (Budget Formulation/Submission Process).

(2) The Department of Transportation's annual budget request for the Federal Aviation Administration shall identify all of the activities carried out by the Administration within the categories of basic research, applied research, and development, as classified by the Office of Management and Budget Circular A–11. Each activity in the categories of basic research, applied research, and development shall be identified regardless of the budget category in which it appears in the budget request.

(h) RESEARCH GRANTS PROGRAM INVOLVING UNDERGRADUATE STUDENTS.—

(1) ESTABLISHMENT.—The Administrator of the Federal Aviation Administration shall establish a program to utilize undergraduate and technical colleges, including Historically Black Colleges and Universities and Hispanic Serving Institutions, in research on subjects of relevance to the Federal Aviation Administration. Grants may be awarded under this subsection for—

(A) * * *

(B) research projects that combine research at primarily undergraduate institutions and technical colleges with other research supported by the Federal Aviation Administration; **[**or**]**

(C) research on future training requirements on projected changes in regulatory requirements for aircraft maintenance and power plant licensees**[**.**]***; or*

(D) research on the impact of new technologies and procedures, particularly those related to aircraft flight deck and air traffic management functions, on training requirements for pilots and air traffic controllers.

* * * * * * *

XIX. COMMITTEE RECOMMENDATIONS

On July 22, 2003, a quorum being present, the Committee on Science favorably reported H.R. 2734, The Federal Aviation Administration Research and Development Reauthorization Act by a voice vote, and recommended its enactment.

XX. PROCEEDINGS OF THE MARKUP BY THE SUBCOMMITTEE ON SPACE AND AERONAUTICS ON H.R. 2734, FEDERAL AVIATION ADMINISTRATION RESEARCH AND DEVELOPMENT REAUTHORIZATION ACT

THURSDAY, JUNE 26, 2003

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON SPACE AND AERONAUTICS,
COMMITTEE ON SCIENCE,
Washington, DC.

The Subcommittee met, pursuant to call, at 10:05 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Dana Rohrabacher [Chairman of the Subcommittee] presiding.

Chairman ROHRABACHER. I now call the Subcommittee on Space and Aeronautics to order. Good morning. And pursuant to notice to the Subcommittee on Space and Aeronautics is that we are meeting today to consider the following measures: H.R. 1085, the NASA Flexibility Act of 2003, and then the Committee Print for the Federal Aviation Administration Research and Development Reauthorization Act.

And I welcome everyone to this markup this morning. And this is the first markup of this subcommittee for the 108th Congress. Let me also be the first to thank Chairman Boehlert for his leadership. Is he here with us yet? He will be. Chairman Boehlert is on his way, and we appreciate his leadership for tackling a difficult, yet crucial, issue and that is NASA's workforce needs.

Today's markup concerns H.R. 1085, the NASA Flexibility Act of 2003. NASA is facing a crisis regarding its workforce. A significant portion of the workforce will be eligible to retire soon, so action needs to be taken. H.R. 1085 is intended to provide NASA the flexibility necessary to attract the best of the brightest talent in the fields of engineering and science by helping NASA address the problems of recruiting and retaining highly skilled technical personnel. H.R. 1085 provides NASA with the authority needed to ensure that our skilled workforce continues to be our greatest asset for pushing the boundaries of this great new frontier of space.

We will also markup the Federal Aviation Administration Research and Development Reauthorization Act. This bill authorizes funding for civil aviation research and development. It also calls for a joint FAA and NASA initiative aimed at resolving the problems facing our national air traffic management system.

This morning, I look forward to working with my colleagues on both sides of the aisle, and I am confident that our efforts will help maintain America's leadership role in aerospace.

I also would like to thank Bart Gordon, the Ranking Member of the Subcommittee, for his hard work on this and his openness and willingness to work in a very bipartisan manner on this bill. And I know there were some rough edges we had to work out, and I appreciate that he did this with good will and went forward in trying to make sure that we could get this job done. And I certainly now would recognize you for any opening remarks that you would like to make.

[The prepared statement of Chairman Rohrabacher follows:]

PREPARED STATEMENT OF CHAIRMAN DANA ROHRABACHER

I want to welcome everyone here this morning for the Space Subcommittee's first markup of the 108th Congress. Let me also be the first to thank Chairman Boehlert for his leadership in tackling a difficult, and yet, crucial issue—NASA's workforce needs.

Today's markup concerns H.R. 1085, the NASA Flexibility Act of 2003. NASA is facing a crisis regarding its workforce. A significant portion of the workforce will be eligible to retire soon. So action needs to be taken. H.R. 1085 is intended to provide NASA the flexibility necessary to attract the best and brightest talent in the fields of engineering and science.

By helping NASA address the problem of recruiting and retaining highly skilled technical personnel, H.R. 1085 provides NASA with the authority needed to ensure that a skilled workforce continues to be our greatest asset for pushing the boundaries of new frontiers.

We will also markup the Federal Aviation Administration Reauthorization Act. This bill authorizes funding for civil aviation research and development. It also calls for a joint FAA and NASA initiative aimed at solving the problems facing our national air traffic management system.

This morning I look forward to working with my colleagues on both sides of the aisle. I am confident that our efforts today will help to maintain our leadership role in aerospace.

Chairman ROHRABACHER. We now turn our attention to the markup of the Committee Print of the Federal Aviation Administration Research and Development Reauthorization. And the—you don't think so? Okay. Oh, I thought it was going to be quick. Okay. Five minutes. This committee is in recess until five minutes after the last vote that we are going to on the Floor.

[Recess.]

Chairman ROHRABACHER. This hearing will now come back to order. And we will now turn our attention to the markup of the Committee Print of the Federal Aviation Administration Research and Development Authorization Act. The FAA and NASA and industry have all worked together to develop air traffic control hardware and systems needed to meet near- and long-term challenges to America's airspace system. The bill, this bill, will help in this regard by calling for the establishment of a join program office between the FAA and NASA to conduct long-term air traffic management research and development. This bill also bolsters ongoing efforts to shore up deficiencies in civil aviation research and development as well by making research and development in the civil aviation area a higher priority.

I now will recognize Mr. Gordon, Ranking Minority Member of the Subcommittee, to present his opening remarks.

Mr. GORDON. Thank you, Mr. Chairman. I am very pleased to express my support for the FAA legislation that we are marking up today. We have had some amendments that we will be offering to perfect the bill, but in general, I think it is a very good piece of legislation. Chairman Rohrabacher has been—has already summa-

rized the provisions of the bill, so I will confine my remarks to a few observations.

First, I am pleased that Chairman Rohrabacher has taken a bipartisan approach to the crafting of this legislation. I am particularly heartened by the fact that it tracks in large part the FAA Title of Mr. Larson's "Aeronautics Research and Development Revitalization Act." That bill was introduced in the last Congress and gained broad bipartisan sponsorship. It was reintroduced earlier this year as H.R. 586 and is again attracting bipartisan co-sponsorship. It is a good bill, and I am glad to see that much of the FAA Title has found its way into the legislation before us today. When we consider a NASA Authorization bill, I hope that the Committee will give equally serious consideration to the NASA aeronautics R&D provisions contained in Mr. Larson's bill.

I am also pleased that Chairman Rohrabacher has incorporated Ms. Johnson's "Airport Cooperative Research Program" provisions to the bill. It is a constructive provision that, if enacted, will do much to bring innovative solutions to the challenges confronting our nation's airport operating authorities.

The bill also focuses on R&D challenges facing our nation's air traffic management system. It proposes a coordinated effort to address the development of the next generation air traffic management system and delineates some clear objectives. It is an approach worth supporting.

More broadly, the bill recognizes the importance of considering aviation-related R&D on a unified basis. Research priorities and plans should not be captive to budget categories. Instead, they need to be examined within the context of overall FAA R&D efforts.

Mr. Chairman, we will have several amendments to the bill, and I believe they will prove non-controversial and acceptable to the Members. They will improve what is already a good bill, and I intend to support this legislation, and I hope that it will be speedily enacted into law.

And thank you. I yield back the balance of my time.

[The prepared statement of Mr. Gordon follows:]

PREPARED STATEMENT OF REPRESENTATIVE BART GORDON

I want to express my support for the FAA legislation that we are marking up today. We will have some amendments that we will offer to perfect the bill, but in general I think that it is a good piece of legislation. Chairman Rohrabacher has already summarized the provisions of the bill, so I will confine my remarks to a few observations.

First, I am pleased that Chairman Rohrabacher has taken a bipartisan approach to the crafting of this legislation. I am particularly heartened by the fact that it tracks in large part the FAA Title of Mr. Larson's "Aeronautics Research and Development Revitalization Act." That bill was introduced in the last Congress and gained broad bipartisan sponsorship. It was reintroduced earlier this year as H.R. 586 and is again attracting bipartisan co-sponsors. It is a good bill, and I am glad to see that much of the FAA Title has found its way into the legislation before us today. When we consider a NASA Authorization bill, I hope that the Committee will give equally serious consideration to the NASA aeronautics R&D provisions contained in Mr. Larson's bill.

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The bill also focuses on the R&D challenges facing our nation's air traffic management system. It proposes a coordinated effort to address the development of the next

generation air traffic management system and delineates some clear objectives. It is an approach worth supporting.

More broadly, the bill recognizes the importance of considering aviation-related R&D on a unified basis. Research priorities and plans should not be captive to budget categories—instead they need to be examined within the context of the overall FAA R&D effort.

Mr. Chairman, we will have several amendments to the bill that I believe will prove non-controversial and acceptable to the Members. They will improve what is already a good bill. I intend to support this legislation and hope that it will be speedily enacted into law.

Thank you, and I yield back the balance of my time.

Chairman ROHRABACHER. Thank you very much.

The Chairman notes that when we talk about research and development and how it is going to play an important role in shaping America's transportation system, we often think of it more in terms of research and development of aircraft, and this is going to make America more competitive, etcetera. But the Chair believes, and I certainly agree with Mr. Gordon, that the air traffic control system and focusing on the way air traffic is managed and the technology necessary to develop, perhaps, a revolutionary new concept of air traffic control in this country could well be more important than developing the airplanes themselves. And we can make the aviation industry here much more efficient and much more effective.

Our airlines are not making a profit right now. One of the problems is the high cost of fuel, but perhaps the way we have organized the system and the technology on which that organization is based can actually play a major role in making our airlines profitable again. So that is why this is very important, and again demonstrating the bipartisan nature of the Subcommittee and the Committee that we all have those goals in mind.

Without objection, all Members may place an opening statement on the Committee Print of the Federal Aviation Administration Research and Development Reauthorization Act in the record at this point.

[The prepared statement of Ms. Johnson follows:]

PREPARED STATEMENT OF REPRESENTATIVE EDDIE BERNICE JOHNSON

Thank you Mr. Chairman and Ranking Member Gordon. I am pleased that the Majority has decided to include language that I provided to create an Airport Cooperative Research Program in this legislation.

This research program will identify and sponsor research on problems that are shared by airport operating agencies and can be solved through applied research but that are not being adequately addressed by existing federal research programs.

As a Member of both this committee and the Transportation and Infrastructure Committee, I believe an Airport Cooperative Research Program is necessary in order to coordinate the efforts of thousands off public and private airport operators, regulators, suppliers, and users at all levels of government and industry so that the aviation industry can provide a consumer friendly product that is safe, secure, and environmentally sound.

Thank you again Mr. Chairman for including this research program—I appreciate the Committee's support in establishing this critical step towards coordination and cooperation in aviation research.

[The prepared statement of Mr. Larson follows:]

PREPARED STATEMENT OF REPRESENTATIVE JOHN LARSON

Thank you, Mr. Chairman. First I want to thank for marking-up this important legislation.

For the past two Congresses, along with my Science Committee colleague, Mr. Forbes, I have introduced bipartisan legislation to address the crisis affecting the

aeronautics industry in this country. A broad range of non-partisan organizations that understand that this country is facing a crisis in our aviation industry has supported that bill, the Aeronautics Research and Development Revitalization act. We have all heard the figures. From reduced lost market share to greatly decreased R&D expenditures, the U.S. is lagging behind international competitors in manufacturing and innovation of commercial airplanes—and our economic and national security are, will continue to, suffer from it.

The legislation I introduced would have established a comprehensive aeronautics R&D endeavor that would have cut across agency divisions between NASA and FAA and would have put forth a goal-oriented effort to take commercial aviation in this country to new heights.

I am pleased that the legislation before us today closely mirrors the FAA portion of my bill and I am fully supportive of it. I am worried, however, that the authorization figures in the bill before us today may be a bit low, considering what is needed to reverse the decline in our aviation industry and to effectively compete with our global competitors. I hope we can work on this before Full Committee markup. But for now, I am pleased that my efforts for the past two years have borne fruit and that people have been listening.

I urge my colleagues to support the bill.

Thank you Mr. Chairman.

Chairman ROHRABACHER. Okay. The bill is now open for discussion. And I ask unanimous consent that the bill—should we have the first reading of the bill? Okay. So I ask unanimous consent that the bill is considered as read and open to amendment at any point and that Members may proceed with amendments in order of the roster. And without any objections, so ordered.

[Note: The Committee Print, Section-By-Section Analysis, and Summary are located in the Appendix.]

Chairman ROHRABACHER. So the bill is now open for amendment. And the first amendment will be an amendment by Mr. Gordon. Mr. Gordon, you are recognized.

Mr. GORDON. Okay. I have an amendment at the desk.

Chairman ROHRABACHER. The Clerk will read the—report the amendment.

The CLERK. Amendment to the Committee Print, offered by Mr. Gordon, page 2, line 13, strike "$349,817,000" and insert——

Mr. GORDON. I ask unanimous consent that the reading of the amendment be dispensed with.

Chairman ROHRABACHER. So ordered without objection. The gentleman is recognized for five minutes to offer his amendment.

Mr. GORDON. Mr. Chairman, I believe that the amendment I am offering is straightforward. The 1998 FAA R&D Authorization bill created the Research Grants Program involving undergraduate students and directed the FAA Administrator to establish a program that would involve undergraduate and technical colleges, including historically black colleges and universities, and Hispanic-serving institutions, in research on subjects relevant to the needs of the FAA. My amendment would update the statute to highlight the importance of research on the impact of new technologies and procedures on the training requirements for pilots and air traffic controllers.

There continue to be dramatic changes in both cockpit technologies and in air traffic management technologies. These technologies will put unique demands on future training requirements. Research in this area would be of enormous value, and I think we should encourage it. In addition, my amendment would extend the funding of the undergraduate research program for another three

years. Although the amounts requested are modest, the benefits of the program will be significant.

I hope the Members will support this amendment, and I yield back the balance of my time.

[Note: The amendment is located in the Appendix.]

Chairman ROHRABACHER. Thank you very much.

The Chairman would like to note that he will support the amendment, gladly. And is there any further discussion on this amendment? Hearing none, all in favor of this amendment, say aye. All opposed, say no. The ayes seem to have it, and it is agreed to.

We have a second amendment. It is an amendment by Mr. Weiner from New York. Are you ready to proceed with your amendment? You have an amendment at the desk, and the Clerk will report the amendment.

The CLERK. [No response.]

Chairman ROHRABACHER. You are—that is—hearing no objection, you may proceed with your statement.

Mr. WEINER. [No response.]

Chairman ROHRABACHER. I would ask Mr. Weiner if he could turn on the microphone that we could all hear you better.

Mr. WEINER. Let me be—let me start again. No, I am just kidding.

The problem became once we had phased in stage three aircraft there was no longer any benchmark for aircraft manufacturers and airlines to meet. So-called stage four hadn't been created. That changed this year in the reauthorization bill that we just did in the Transportation Committee. We have essentially said that now we have to start hitting even quieter benchmarks for the next generation of aircraft.

As with so many areas of research, research into quieter aircraft engines has always been started on the federal level. We heard testimony in the Transportation Committee and in this committee saying that essentially the money that we provide for research, whether it be via NASA or the Federal Aviation Administration, provides the benchmark for technology that is eventually used in commercial aircraft.

The problem that I found is that the money that we added for this new program to do more research was taken from the FAA's noise abatement program. That noise abatement program benefits all of our Districts. And it is a program that does things like makes—replaces windows in schools, that does noise monitoring around airports all around the country. And what my amendment would do is say, "Let us create this environmental research and development account, but let us not cannibalize the noise abatement program." So my amendment would take that $20 million that was identified in the Committee Print and simply move it to create, essentially, a $20 million increase in the environmental research and development account and restore the noise abatement program, creating, essentially, the same effect but would not take the funds any longer, if my amendment were passed, from the noise abatement program.

I would hope that the Chairman and my colleagues would support it. I think it gets us where we need to go without reducing a program that I think benefits all of our Districts already.

And I yield back the balance of my time.

[Note: The amendment is located in the Appendix.]

Chairman ROHRABACHER. The Chair would like to announce that he will favor the amendment and commends Mr. Weiner, because let me just recognize that I remember one of your first speeches on—in this committee dealt with aircraft noise. And you really focused on that and made that a really important part of your agenda. So the Chairman gladly accepts this amendment and supports it. Does anyone else have any discussion?

Mr. Gordon.

Mr. GORDON. I have, but I better not. I don't want to mess it up, so let me just quickly say I concur with this common sense amendment.

Chairman ROHRABACHER. Okay. With that said, if there is no other discussion, all those in favor of this amendment, say aye. All opposed, say no. Well, the ayes appear to have it. The amendment is agreed to.

We have another amendment. Ms. Jackson Lee is not here for her amendment yet, but we do have an amendment by myself, on behalf of Mr. Boehlert. The next amendment on the roster is amendment number three, offered, as I say, by myself, on behalf of Mr. Boehlert. And I have an amendment at the desk. Will the Clerk please report the amendment?

The CLERK. The amendment to the Committee Print, offered by Mr. Boehlert, page 14, line 11, insert "to provide staff support to the governing board established under paragraph (2) and" after "National Academy of Sciences".

Chairman ROHRABACHER. I ask unanimous consent to dispense with any further reading of the amendment. So ordered.

And I now recognize myself to discuss the amendment. In brief, the amendment specifies that the National Academy of Sciences shall provide staff support for the cooperative research program governing board. So it is as simple as that. And this is a very simple amendment, and it clarifies how the airport cooperative research program will work. This program is based on existing highway and transit research programs. The amendment simply makes clearer that the National Academy of Sciences will provide staff support for the governing board that will guide the program as well as manage the actual research projects that the Secretary selects.

I believe that this is a non-controversial amendment, and I would urge its adoption.

[Note: The amendment is located in the Appendix.]

Chairman ROHRABACHER. So with that said, is there any further discussion? If not, all in favor of this amendment, say aye. All opposed say nay. The ayes seem to have it. The amendment is agreed to.

We have one further amendment, if Ms. Jackson Lee is here, or is there someone who would like to—all right. Ms. Jackson Lee will be free to submit her amendment at Full Committee.

And with that said, I think that we now will move on to the adoption of the bill. Are there any further amendments? Hearing none, the question is on the bill. The Committee Print of the Federal Aviation Administration Research and Development Reauthor-

ization Act, as amended. All those in favor will say aye. All those opposed, say no. It appears that the ayes have it.

I now recognize Mr. Gordon to offer a motion.

Mr. GORDON. Mr. Chairman, I move the Subcommittee to favorably report the bill, the Federal Aviation Administration Research and Development Reauthorization Act, as amended, to the Full Committee. Furthermore, I ask unanimous consent that the Staff be instructed to make all necessary technical and conforming changes to the bill, as amended, in accordance with the recommendations of the Subcommittee.

Chairman ROHRABACHER. The Chair notes the presence of a reporting quorum. The question is on the motion to report the bill favorably. Those in favor of the motion will signify by saying aye. All opposed, no. The ayes appear to have it. The bill is favorably reported.

Mr. LARSON. Mr. Chairman.

Chairman ROHRABACHER. Yes.

Mr. LARSON. Mr. Chairman, I would——

Chairman ROHRABACHER. Well, wait a minute. Without objection, the motion will be—to reconsider is laid upon the table. Yes.

Mr. LARSON. Thank you, Mr. Chairman.

Mr. Chairman, I just wanted to thank you personally and the Staff and Mr. Gordon for their help and assistance and my colleague, Mr. Forbes from Virginia, for working on a matter that is of crucial importance to the aeronautical industry and commend you for your continued support and efforts in this area. I am concerned that the monies are a bit low and hope that we can continue to work on that as the bill moves forward to the Floor.

Chairman ROHRABACHER. Thank you very much.

And this concludes our Committee markup. And without any objection, we will declare this committee adjourned. So I do declare this committee meeting adjourned.

[Whereupon, at 11:25 a.m., the Subcommittee was adjourned.]

Appendix

ROSTER, AMENDMENTS, COMMITTEE PRINT, SECTION-BY-SECTION ANALYSIS, SUMMARY OF COMMITTEE PRINT

COMMITTEE ON SCIENCE

SUBCOMMITTEE ON SPACE & AERONAUTICS

June 26, 2003

AMENDMENT ROSTER

Committee Print of the FAA Research and Development Reauthorization Bill

No.	Sponsor	Description	Suggested Vote
1	Mr. Gordon	to authorize human factors research projects at undergraduate and technical colleges	Adopted by Voice Vote
2	Mr. Weiner	to authorize noise and emissions research	Adopted by Voice Vote
3	Mr. Boehlert	specifying that the National Academy of Sciences shall provide staff support to the governing board	Adopted by Voice Vote

AMENDMENT TO THE COMMITTEE PRINT

OFFERED BY MR. GORDON

Page 2, line 13, strike "$349,817,000" and insert "$351,317,000".

Page 2, line 15, strike "$168,500,000" and insert "$170,000,000".

Page 3, line 10, strike "and".

Page 3, line 12, insert "and" after the semicolon.

Page 3, after line 12, insert the following new clause:

"(viii) $1,500,000 shall be for carrying out subsection (h) of this section;

Page 4, line 5, strike "$374,540,000" and insert "$376,190,000".

Page 4, line 7, strike "$185,000,000" and insert "$186,650,000".

Page 5, line 4, strike "and".

Page 5, line 6, insert "and" after the semicolon.

Page 5, after line 6, insert the following new clause:

"(viii) $1,650,000 shall be for carrying out subsection (h) of this section;

Page 6, line 1, strike "$390,340,000" and insert "$392,155,000".

Page 6, line 3, strike "$206,472,000" and insert "$208,287,000".

Page 6, line 24, strike "and".

Page 7, line 2, insert "and" after the semicolon.

Page 7, after line 2, insert the following new clause:

"(viii) $1,815,000 shall be for carrying out subsection (h) of this section;

At the end of the bill insert the following new section:

SEC. 8. RESEARCH ON AVIATION TRAINING.

Section 48102(h)(1) of title 49, United States Code, is amended—

(1) by striking "or" at the end of subparagraph (B);

(2) by striking the period at the end of subparagraph (C) and inserting "; or"; and

(3) by adding at the end the following new subparagraph:

"(D) research on the impact of new technologies and procedures, particularly those related to aircraft flight deck and air traffic management functions, on training requirements for pilots and air traffic controllers.".

AMENDMENT TO THE COMMITTEE PRINT

OFFERED BY MR. WEINER

Page 2, line 13, strike "$349,817,000" and insert "$369,817,000".

Page 2, line 15, strike "$168,500,000" and insert "$188,500,000".

Page 3, line 7, strike "$10,000,000" and insert "$30,000,000".

Page 3, line 8, insert ", of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions" after "Development".

Page 4, line 5, strike "$374,540,000" and insert "$394,540,000".

Page 4, line 7, strike "$185,000,000" and insert "$205,000,000".

Page 5, line 1, strike "$10,109,000" and insert "$30,109,000".

Page 5, line 2, insert ", of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions" after "Development".

Page 6, line 1, strike "$390,340,000" and insert "$410,340,000".

Page 6, line 3, strike "$206,472,000" and insert "$226,472,000".

Page 6, line 21, strike "$10,223,000" and insert "$30,223,000".

Page 6, line 22, insert ", of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions" after "Development".

Page 14, line 20, through the end of the bill, strike section 7.

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AMENDMENT TO THE COMMITTEE PRINT
OFFERED BY MR. BOEHLERT

Page 14, line 11, insert "to provide staff support to the governing board established under paragraph (2) and" after "National Academy of Sciences".

COMMITTEE PRINT

JUNE 24, 2003

108TH CONGRESS
1ST SESSION

H. R. _____

IN THE HOUSE OF REPRESENTATIVES

Mr. ROHRABACHER introduced the following bill; which was referred to the Committee on _____

A BILL

To authorize appropriations for the civil aviation research and development projects and activities of the Federal Aviation Administration, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Federal Aviation Administration Research and Development Reauthorization Act".

SEC. 2. AUTHORIZATION OF APPROPRIATIONS.

Section 48102(a) of title 49, United States Code, is amended—

(1) by striking "to carry out sections 44504" and inserting "for conducting civil aviation research and development under sections 44504";

(2) by striking "and" at the end of paragraph (7);

(3) by striking the period at the end of paragraph (8) and inserting a semicolon; and

(4) by adding at the end the following new paragraphs:

"(9) for fiscal year 2004, $349,817,000, including—

"(A) $168,500,000 for Research, Engineering, and Development, of which—

"(i) $65,000,000 shall be for Improving Aviation Safety;

"(ii) $24,000,000 shall be for Weather Safety Research;

"(iii) $15,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development

Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

"(iv) $27,500,000 shall be for Human Factors and Aeromedical Research;

"(v) $10,000,000 shall be for Environmental Research and Development;

"(vi) $7,000,000 shall be for Research Mission Support; and

"(vii) $20,000,000 shall be for the Airport Cooperative Research Program;

"(B) $163,900,000 for Facilities and Equipment, of which—

"(i) $42,800,000 shall be for Advanced Technology Development and Prototyping;

"(ii) $30,300,000 shall be for Safe Flight 21; and

"(iii) $90,800,000 shall be for the Center for Advanced Aviation System Development; and

"(C) $17,417,000 for Airport Improvement Program Research and Development, of which—

"(i) $9,667,000 shall be for Airports Technology-Safety; and

"(ii) $7,750,000 shall be for Airports Technology-Efficiency;

"(10) for fiscal year 2005, $374,540,000, including—

"(A) $185,000,000 for Research, Engineering, and Development, of which—

"(i) $65,705,000 shall be for Improving Aviation Safety;

"(ii) $24,260,000 shall be for Weather Safety Research;

"(iii) $30,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

"(iv) $27,800,000 shall be for Human Factors and Aeromedical Research;

"(v) $10,109,000 shall be for Environmental Research and Development;

"(vi) $7,076,000 shall be for Research Mission Support; and

"(vii) $20,000,000 shall be for the Airport Cooperative Research Program;

"(B) $172,000,000 for Facilities and Equipment, of which—

"(i) $43,300,000 shall be for Advanced Technology Development and Prototyping;

"(ii) $31,100,000 shall be for Safe Flight 21;

"(iii) $95,400,000 shall be for the Center for Advanced Aviation System Development; and

"(iv) $2,200,000 shall be for Free Flight Phase 2; and

"(C) $17,592,000 for Airport Improvement Program Research and Development, of which—

"(i) $9,764,000 shall be for Airports Technology-Safety; and

"(ii) $7,828,000 shall be for Airports Technology-Efficiency; and

"(11) for fiscal year 2006, $390,340,000, including—

"(A) $206,472,000 for Research, Engineering, and Development, of which—

"(i) $66,447,000 shall be for Improving Aviation Safety;

"(ii) $24,534,000 shall be for Weather Safety Research;

"(iii) $50,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

"(iv) $28,112,000 shall be for Human Factors and Aeromedical Research;

"(v) $10,223,000 shall be for Environmental Research and Development;

"(vi) $7,156,000 shall be for Research Mission Support; and

"(vii) $20,000,000 shall be for the Airport Cooperation Research Program;

"(B) $166,100,000 for Facilities and Equipment, of which—

"(i) $42,200,000 shall be for Advanced Technology Development and Prototyping;

"(ii) $23,900,000 shall be for Safe Flight 21; and

"(iii) $100,000,000 shall be for the Center for Advanced Aviation System Development; and

"(C) $17,768,000 for Airport Improvement Program Research and Development, of which—

"(i) $9,862,000 shall be for Airports Technology-Safety; and

"(ii) $7,906,000 shall be for Airports Technology-Efficiency.".

SEC. 3. NEXT GENERATION AIR TRAFFIC MANAGEMENT RESEARCH AND DEVELOPMENT JOINT PROGRAM OFFICE.

(a) ESTABLISHMENT.—There is established a Next Generation Air Traffic Management Research and Development Joint Program Office (referred to in this section

as the "Office"). The Office shall be jointly managed by the Federal Aviation Administration and the National Aeronautics and Space Administration. The objective of the Office shall be to carry out research and development of an air traffic management system designed to meet national long-term aviation security, safety, and capacity needs.

(b) DIRECTOR AND DEPUTY DIRECTOR.—The Office shall be headed by a Director who shall be a senior executive of the Federal Aviation Administration. The Deputy Director shall be a senior executive of the National Aeronautics and Space Administration. Not later than 120 days after the date of enactment of this Act, the Administrators of the Federal Aviation Administration and the National Aeronautics and Space Administration shall jointly appoint the Director and Deputy Director of the Office.

(c) FUNCTIONS OF THE OFFICE.—The Office shall manage air traffic management research and development programs and initiatives within the Federal Aviation Administration and the National Aeronautics and Space Administration. The responsibilities of the Office shall include—

(1) establishing and managing a research and development program for a next generation air traf-

fic management system capable of tripling capacity by the year 2025;

(2) entering into grants, cooperative agreements or contracts, or otherwise awarding or using funds appropriated for air traffic management research and development to carry out paragraph (1);

(3) utilizing the facilities, capabilities, expertise, and experience of Federal agencies, national laboratories, universities, nonprofit organizations, industrial entities, and other non-Federal entities to carry out paragraph (1);

(4) coordinating with the Department of Defense, the Department of Commerce, the Under Secretary for Science and Technology at the Department of Homeland Security, the National Security Council, the Department of Transportation, and other Federal agencies; and

(5) consulting with the private sector (including representatives of general aviation, commercial aviation, and the space industry), members of the public, and other interested parties on the program.

(d) NEXT GENERATION AIR TRAFFIC MANAGEMENT RESEARCH AND DEVELOPMENT PLAN.—

(1) REQUIREMENT.—The Office shall develop a research and development plan to carry out this section.

(2) GOAL.—The goal of the plan shall be to enable the creation of a National Airspace System architecture that would—

(A) be based on emerging ground-based and space-based communications, navigation, and surveillance technologies;

(B) increase the level of safety, security, and efficiency of the National Airspace System;

(C) integrate data and information flow effectively with other Federal agencies responsible for providing for our Nation's defense and security;

(D) be scalable to accommodate and encourage substantial growth in domestic and international transportation;

(E) anticipate and accommodate continuing technology upgrades; and

(F) accommodate a wide range of aircraft operations, including airlines, air taxis, helicopters, general aviation, and unmanned aerial vehicles.

(3) CONTENTS.—The plan shall describe, at a minimum—

(A) the most significant technical hurdles that stand in the way of achieving the goal described in paragraph (2);

(B) the research and development projects that will be carried out to overcome the technical hurdles described in subparagraph (A), including, for each project, whether it would be funded by the Federal Aviation Administration, the National Aeronautics and Space Administration, or both, and whether the work would be carried by the Federal Government, corporations, or universities, or a combination thereof;

(C) the annual anticipated cost of carrying out the plan;

(D) the technical milestones that will be used to evaluate progress in carrying out the plan; and

(E) how the research and development activities will be coordinated with other appropriate Federal agencies.

(e) REPORTS.—The Director of the Office shall transmit to the Committee on Science of the House of

Representatives and to the Committee on Commerce, Science, and Transportation of the Senate—

(1) not later than 120 days after the date of enactment of this Act, the plan required under subsection (d); and

(2) annually at the time of the President's budget request, a report describing the progress in carrying out the plan required under subsection (d) and any changes to that plan.

SEC. 4. BUDGET DESIGNATION FOR RESEARCH AND DEVELOPMENT ACTIVITIES.

Section 48102 of title 49, United States Code, is amended by inserting after subsection (f) the following new subsection:

"(g) DESIGNATION OF ACTIVITIES.—(1) The amounts appropriated under subsection (a) are for the support of all research and development activities carried out by the Federal Aviation Administration that fall within the categories of basic research, applied research, and development, including the design and development of prototypes, in accordance with the classifications of the Office of Management and Budget Circular A–11 (Budget Formulation/Submission Process).

"(2) The Department of Transportation's annual budget request for the Federal Aviation Administration

shall identify all of the activities carried out by the Administration within the categories of basic research, applied research, and development, as classified by the Office of Management and Budget Circular A–11. Each activity in the categories of basic research, applied research, and development shall be identified regardless of the budget category in which it appears in the budget request.".

SEC. 5. AIRPORT COOPERATIVE RESEARCH PROGRAM.

Section 44511 of title 49, United States Code, is amended by adding at the end the following new subsection:

"(f) AIRPORT COOPERATIVE RESEARCH PROGRAM.—

"(1) ESTABLISHMENT.—The Secretary of Transportation shall establish an airport cooperative research program to—

"(1) identify problems that are shared by airport operating agencies and can be solved through applied research but that are not being adequately addressed by existing Federal research programs; and

"(B) fund research to address those problems.

"(2) GOVERNANCE.—The Secretary of Transportation shall appoint an independent governing board for the research program established under

this subsection. The governing board shall be appointed from candidates nominated by national associations representing public airport operating agencies, airport executives, State aviation officials, and the scheduled airlines, and shall include representatives of appropriate Federal agencies. Section 14 of the Federal Advisory Committee Act shall not apply to the governing board.

"(3) IMPLEMENTATION.—The Secretary of Transportation shall enter into an arrangement with the National Academy of Sciences to carry out projects proposed by the governing board that the Secretary considers appropriate.".

SEC. 6. DEVELOPMENT OF ANALYTICAL TOOLS AND CERTIFICATION METHODS.

The Federal Aviation Administration shall conduct research to promote the development of analytical tools to improve existing certification methods and to reduce the overall costs for the certification of new products.

SEC. 7. RESEARCH PROGRAM TO REDUCE COMMUNITY EXPOSURE TO AIRCRAFT NOISE AND EMISSIONS.

(a) IN GENERAL.—Subchapter I of chapter 475 of title 49, United States Code, is amended by adding a new section at the end as follows:

"§ 47511. Research program to reduce community exposure to aircraft noise and emissions

"The Secretary shall provide an amount equal to 10 percent of the amount to be made available under section 47117(e)(1)(A) of this title, as estimated at the beginning of a fiscal year, but not to exceed $20,000,000, for research activities related to reducing community exposure to civilian aircraft noise or emissions through grants or other measures authorized under section 106(l)(6) of this title, including reimbursable agreements with other Federal agencies.".

(b) CONFORMING AMENDMENT.—The analysis of such subchapter I of chapter 475 is amended by adding at the end the following:

"47511. Research program to reduce community exposure to aircraft noise and emissions.".

SECTION-BY-SECTION ANALYSIS OF
H.R. 2734, FEDERAL AVIATION ADMINISTRATION R&D REAUTHORIZATION ACT

Sec. 1. Short Title

"Federal Aviation Administration Research and Development Reauthorization Act."

Sec. 2. Authorization of Appropriations

Authorizes appropriations for Federal Aviation Administration (FAA) Research and Development programs, projects and activities.

Program Account	FY03 Actual	FY04 Request	FY04 Auth.	FY05 Auth.	FY06 Auth.
Research, Engineering & Development	$147.5M	$100.0M	$168.5M	$184.9M	$206.5M
Facilities and Equipment*	$177.5M	$163.9M	$163.9M	$172.0M	$166.1M
Airport Improvement Program*	$ 0.0M	$ 17.4M	$ 17.4M	$ 17.6M	$ 17.7M
Total	**$325.0M**	**$281.3M**	**$349.8M**	**$374.5M**	**$390.3M**

*Research and development projects and activities only.

Sec. 3. Next Generation Air Traffic Management Research and Development Joint Program Office

Requires FAA and the National Aeronautics and Space Administration (NASA) to establish a Joint Program Office (JPO) to conduct Next Generation Air Traffic Management research and development. Requires the FAA and NASA Administrators to jointly appoint an FAA senior executive to be Director, and a NASA senior executive to be Deputy Director.

Requires the JPO to establish and carry out, on behalf of FAA and NASA, long-term air traffic management R&D capable of tripling our domestic capacity by 2025. The JPO is authorized to spend agency funds dedicated to air traffic management R&D on behalf of NASA and FAA. Authorizes the JPO to use the facilities and expertise of other Federal agencies, national laboratories, universities, non-profit organizations, and private sector entities.

Requires the JPO to develop a research and development plan with cost and schedule milestones. Requires the JPO to make an annual report to Congress on progress to date, and program plans for the following year.

Authorizes a total of $95 million over five years.

Sec. 4. Budget Designation for Research and Development Activities

Amends 49 USC 48102 (FAA Research and Development), to require future FAA budgets to identify all research and development activities that would be classified as basic research, applied research, or development under the guidelines established by the Office of Management and Budget Circular A–11, regardless of the budget category in which it appears in the budget request.

Sec. 5. Airport Cooperative Research Program

Requires the Secretary of Transportation to establish an airport cooperative research grant program to identify problems—shared by airport operating agencies—that can be solved through applied research, and to fund research addressing those problems.

Requires the Secretary to appoint a governing board from candidates proposed by national associations representing airport executives, public airport operating agencies, State aviation officials, and the scheduled airlines. The board will solicit, review and propose airport R&D projects. The Secretary will review and approve projects for funding.

Authorizes $20 million annually from the Research, Engineering and Development account.

Sec. 6. Development of Analytical Tools and Certification Methods

Directs FAA to conduct research to promote development of analytical tools to improve existing certification methods for new aircraft, engines, and aircraft systems, to reduce overall certification costs for new products.

Sec. 7. Research Program to Reduce Community Exposure to Aircraft Noise and Emissions

Establishes a program to fund research and development of noise and emissions reduction technologies. Authorizes up to $20 million annually using noise mitigation funds from the Airport Improvement Program.

The Federal Aviation Administration Research and Development Reauthorization Act

- Reauthorizes the FAA's Research and Development program for FY04, FY05, and FY06.
- Establishes an FAA–NASA Next Generation Air Traffic Management Joint Program Office. Requires a research and development plan that will enable development of an air traffic management system capable of tripling capacity by the year 2025. Authorizes $95 million (aggregate) over the life of the bill.
- Amends Section 48102 of Title 49, United States Code, to clarify that amounts appropriated under this subsection support all research and development activities carried out by FAA.
- Establishes an Airport Cooperative Research Program. Authorizes $20 million annually.
- Requires FAA to conduct research on development of analytical tools to help reduce the cost of certifying new aircraft, aircraft engines, and related systems.
- Establishes a research program to reduce community exposure to aircraft noise and emissions. Authorizes $20 million annually.

FAA Research and Development Funding History with Bill Authorization Levels

Program	FY02 Actual	FY03 Actual	FY04 Request	FY04 Auth.	FY05 Auth.	FY06 Auth.
Res., Eng., and Develop.	$244.8M	$147.5M	$100.0M	$168.5M	$184.9M	$206.5M
Facilities & Equip.	$178.3M	$177.5M	$163.9M	$163.9M	$172.0M	$166.1M
AIP	$0.0M	$0.0M	$17.4M	$17.4M	$17.6M	$17.7M
Total	**$423.1M**	**$325.0M**	**$281.3M**	**$349.8M**	**$374.5M**	**$390.3M**

XXI. PROCEEDINGS OF THE FULL COMMITTEE MARKUP ON H.R. 2734, FEDERAL AVIATION ADMINISTRATION RESEARCH AND DEVELOPMENT REAUTHORIZATION ACT

TUESDAY, JULY 22, 2003

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
Washington, DC.

The Committee met, pursuant to other business, in Room 2318 of the Rayburn House Office Building, Hon. Sherwood D. Boehlert [Chairman of the Committee] presiding.

Mr. FORBES. [Presiding] We will now consider the bill H.R. 2734, the *Federal Aviation Administration Research and Development Reauthorization Act,* as amended.

[The prepared statement of Chairman Rohrabacher follows:]

PREPARED STATEMENT OF CHAIRMAN DANA ROHRABACHER

I am pleased that the House Science Committee is considering H.R. 2734 today because of its support for a vital governmental agency—the Federal Aviation Administration. H.R. 2734, through its authorization of appropriations for civil aviation research and development projects, will assist the agency in accomplishing its mission to ensure safe air travel within the United States. This bill emphasizes (a) aviation safety by authorizing funds to improve aviation safety and weather safety research, and (b) the development of next-generation technology through the development of more modern air traffic management equipment and noise emission reduction concepts.

I urge my colleagues to support this important piece of legislation.

I yield back the balance of my time.

Mr. FORBES. I would like to first make some opening remarks as to this bill. The Federal Aviation Administration plays a unique and critical role in our economy. The FAA provides air traffic control services 24 hours a day, 365 days a year and ensures that the aircraft we fly are safe. We have all heard the expression that an ounce of prevention is worth a pound of cure. In essence, that is why the Government spends money on R&D. Every dollar we spend a day on curing diseases or protecting our homeland is money saved down the road in health care costs and more importantly, save lives.

Without FAA, commercial air transportation, a huge source of high paying, high quality jobs, could not operate. To carry out its mission, FAA must build, maintain and operate a complex system of communications, navigation and surveillance systems to monitor and separate aircraft. It must also stay current on new designs and technologies that are constantly emerging from aerospace industry manufacturers and suppliers.

I am troubled that FAA's research and development budget is relatively modest compared to the Agency's overall spending profile. FAA must perform research and development to increase the capacity of our air traffic management system at a rate equal to projected growth, otherwise our national air transportation system will suffer and so will our economy.

FAA's research and development program must also keep pace with the introduction of new products, designs and technologies that manufacturers are bringing to market and certify their safety and performance. I believe the FAA must be provided with a much more robust research and development program.

H.R. 2734 is a start. This bill provides the Agency with increased authorization levels for FAA's research and development program. It establishes a joint program office to manage research and development for the next generation air traffic management system. It continues important research programs to address aging aircraft, fire safety and air traffic control technology, and it authorizes new spending for aircraft noise and emissions reductions research. I now recognize Mr. Hall for five minutes.

[The prepared statement of Mr. Forbes follows:]

PREPARED STATEMENT OF REPRESENTATIVE J. RANDY FORBES

Mr. Chairman, the Federal Aviation Administration plays a unique and critical role in our economy. The FAA provides air traffic control services 24 hours a day, 365 days a year, and ensures that the aircraft we fly in are safe. Without FAA, commercial air transportation—a huge source of high-paying, high quality jobs—could not operate.

To carry out its mission, FAA must build, maintain, and operate a complex system of communications, navigation and surveillance systems to monitor and separate aircraft. It must also stay current on new designs and technologies that are constantly emerging from aerospace industry manufacturers and suppliers.

I am troubled that FAA's research and development budget is relatively modest compared to the agency's overall spending profile. FAA must perform research and development to increase the capacity of our air traffic management system at a rate equal to projected growth, otherwise our national air transportation system will suffer, and so will our economy. FAA's research and development program must also keep pace with the introduction of new products, designs, and technologies that manufacturers are bringing to market, and certify their safety and performance.

I believe FAA must be provided with a much more robust research and development program. H.R. 2734 is a start. This bill provides the agency with increased authorization levels for FAA's research and development program, it establishes a Joint Program Office to manage research and development for the next generation air traffic management system, it continues important research programs to address aging aircraft, fire safety, and air traffic control technology, and it authorizes new spending for aircraft noise and emissions reduction research.

I urge all Members to support this worthwhile legislation. Thank you.

Mr. HALL. Mr. Chairman, I won't use the five minutes. I am pleased to support this bill, the *FAA Research and Development Reauthorization Act.* It is a good bill. It reflects the Committee's long-held interest in ensuring that the Nation's aviation system is safe and efficient. Now, we have several members, I think two from this side of the aisle, who intend to offer some very constructive amendments to the bill, and I hope the Chairman will give these amendments careful consideration. With that, I yield back my time.

[The prepared statement of Mr. Hall follows:]

PREPARED STATEMENT OF REPRESENTATIVE RALPH M. HALL

Mr. Chairman, I am pleased to support H.R. 2734, the *FAA Research And Development Reauthorization Act.* It is a good bill, and it reflects this Committee's long-

held interest in ensuring that the Nation's aviation system is safe and efficient. It also is a bill that incorporates good ideas from both sides of the aisle.

The specific features of the bill have already been described, so I will be brief in my comments. I would just note that the bill takes an important step in pulling together the resources of the government to meet the challenge of designing the next generation air traffic management system. Our air traffic management system is critical to the continued viability of our aviation sector, and R&D has an important role to play in ensuring that it keeps up with the future demands on it.

I would also note that the bill takes a unified approach to the FAA's R&D activities. Such an approach is necessary if we are to make sure that resources are wisely applied and critical research issues are addressed.

Mr. Chairman, a number of Members from this side of the aisle intend to offer some constructive amendments to the bill, and I hope that the Chairman will give those amendments careful consideration.

In closing, I would once again say that I think this is a good bill, and I hope that the Committee will report it out favorably.

Thank you, and I yield back the balance of my time.

Mr. FORBES. Thank you. Without objection, all Members may place opening statements in the record at this point in time.

[The prepared statement of Mr. Costello follows:]

PREPARED STATEMENT OF REPRESENTATIVE JERRY F. COSTELLO

Good morning. Today, the House Science Committee is considering six bills for markup. Most are non-controversial and receive wide bipartisan support.

However, I have strong reservations regarding H.R. 1085, the *NASA Flexibility Act of 2003.* I believe we must wait for recommendations and guidance from the Gehman Commission that will address management issues. If we are going to address the problems concerning NASA, we need to take into account the goals and vision of NASA and manned space flight. I understand that NASA needs to do more to attract and retain the best possible workforce; however, I believe we can assist NASA by waiting to hear what recommendations the Gehman Commission makes so we can address all the management problems affecting NASA and its workforce. I believe we must also continue to review NASA's existing workforce authority and why it is underutilized.

Mr. Chairman, instead of rushing to complete this significant legislation, I believe we must take a step back and review all our options before moving forward on legislation that does not address the problem.

Aside from H.R. 1085, I believe the other pieces of legislation have been considered in a bipartisan fashion and expand programs in numerous agencies. For example, H.R. 2692, the *United States Fire Administration (USFA) Authorization Act of 2003,* authorizes funding for USFA activities, such as training, fire research and public education over the next three years. Over the last three decades, America's fire safety record has significantly improved. However, there are still opportunities for further improvements in our fire safety record, such as encouraging. the use of sprinkler systems in homes. H.R. 2692 will lead us in the right direction. As a member of the Congressional Fire Services Caucus, I am proud to support this legislation.

Further, I am glad the House Science Committee is moving forward on the *FAA Research and Development Reauthorization Act of 2003.* As a conferee to the FAA bill for the Science Committee, I look forward to working with my colleagues to enhance the research and development programs as laid out in the legislation before this committee.

Mr. Chairman, I want to thank the Committee for all their hard work on these important issues and look forward to today's proceedings.

Mr. FORBES. I ask unanimous consent that the bill is considered as read and opened to amendment at any point, and that the Members proceed with the amendments in the order of the roster. Without objection, so ordered. The first amendment on the roster is Amendment #1, offered by Mr. Matheson from Utah. Are you ready to proceed?

Mr. MATHESON. Thank you, Mr. Chairman. I have an amendment at the desk.

Mr. FORBES. The Clerk will report the amendment.

Ms. TESSIERI. Amendment to H.R. 2734 offered by Mr. Matheson.

[Amendment to H.R. 2734 offered by Jim Matheson appears in the Appendix.]

Mr. FORBES. I ask unanimous consent to dispense with the reading. Without objection, so ordered. Mr. Matheson is recognized for five minutes to offer his amendment.

Mr. MATHESON. Well, thank you, Mr. Chairman. I want to commend the Chair and Ranking Member Hall for their important work on this measure and I will make a very brief statement. My amendment to this bill is quite simple. It asks the FAA to prioritize noise pollution when redesigning commercial airspace.

Though safety is always an important consideration in airspace design, I believe that consideration of noise pollution is also essential in order to provide the public with the best possible flight paths. This is an issue that is ongoing right now in my own Congressional district. I think it is important it be part of the R&D bill, and I hope my colleagues will join me in supporting this amendment. I yield back to——

Ms. LOFGREN. Would the gentleman yield? I would just like to say, so I don't have to get my own time, how grateful I am to your—to you for offering this amendment. Obviously, safety has to be the first level of decision-making. No one would dispute that, but I am so eager for the FAA to take more account of noise.

Recently, the airspace into San Francisco International Airport was redone and they completely ignored the impact of air traffic over the larger city, the city of San Jose, which my constituents were a little grumpy about, and—including myself, I might add, so I am hopeful that we can come together, understanding that this will never trump safety, but I sure would like to have them take a look at noise, and thank you for yielding and thank you for the amendment.

Mr. MATHESON. And I will just say this is a common discussion that I have had with a lot of folks. I think it is important this issue be considered, and with that, Mr. Chairman, now, I will yield back.

Ms. WOOLSEY. And Mr. Chairman.

Mr. FORBES. Thank you for——

Ms. WOOLSEY. I would like to speak in favor of Mr. Matheson's amendment. My constituents in Marin County, California, just across the Golden Gate Bridge are talking to my office daily about the changes in the air patterns and noise and what is going on, and we, too, know that safety is it, and I know that probably a great majority of the travelers are from my district, but they still want to make sure that low-flying planes and convenience doesn't trump noise. Safety, yes, but not convenience, and I totally support Mr. Matheson's amendment.

Mr. FORBES. The Chair certainly recognizes all these good comments and hopes that bill—the amendment will be accepted. Is there further discussion? If no, the vote occurs on the amendment. All in favor say aye. Those opposed, say no. The ayes have it and the amendment is agreed to. The next amendment on the roster is Amendment #2, offered by the distinguished gentleman from Pennsylvania, Mr. Weldon. Mr. Weldon, are you ready to proceed with your amendment?

Mr. WELDON. I am ready. Mr. Chairman, I ask unanimous consent that the revised amendment, just a technical change, be distributed to members in lieu of the original one.

Mr. FORBES. The Clerk will report the amendment.

Ms. TESSIERI. Amendment to H.R. 2734——

Mr. FORBES. I ask unanimous consent to dispense with the reading. Without objection, that is so ordered. Mr. Weldon is recognized for five minutes to offer his amendment.

Mr. WELDON. Mr. Chairman, this amendment is actually being offered by myself and Mr. Larson of Connecticut. It is a bipartisan amendment that is based on Mr. Larson's original bill, to focus on rotocraft research. As you know, we have conducted hearings and have unfortunately found out that, in the case of science and research, our country has been falling behind the rest of the world in the area of rotocraft. We tend to focus a lot of our effort in this Committee on space and on aviation, but we tend to forget about rotocraft, and if you are from the states of Texas, as my good friend from—the Ranking Member is, Bell Textron is almost totally a rotocraft company. If you are from Pennsylvania, in Bob Brady's district, Boeing is a rotocraft manufacturer. If you are from Connecticut, you have a major presence of Sikorsky. Unfortunately, NASA has been pulling out of this effort, in fact just shut down their two big wind tunnels out at NASA Ames in California, which is devastating.

This is an effort with the support of the FAA, who does have a focus on rotocraft safety, to put back into place an authorization for a new initiative. This effort, as I said, was developed by Mr. Larson. It is an outstanding piece of legislation that I took and incorporated into this broader bill, to allow for increased rotocraft research. This legislation, this amendment is supported by the American Helicopter Association. It is supported by the three major helicopter manufacturers, the CEO of Bell Textron, the CEO of Boeing Helicopters and the CEO of Sikorsky. It is supported by the major academic institutions doing rotocraft research, and that includes Penn State, Georgia Tech and the University of Maryland. It is supported by all of the major players in rotocraft as a sign, as a symbol that we want this country to get back into full competition.

Now, Mr. Chairman, this legislation is consistent with the final report of the Commission on the Future of the United States Aerospace Industry. In fact, I have some quotes from that document that specifically highlight the need to address what we are doing here.

Now, a quote from this document, in terms of discussing rotocraft. "Although we are ahead of other countries in investment in military technology and capability, we are on the edge of dropping out of the race in the civilian sector. Starved of funds, the U.S. Government research and development infrastructure in rotocraft is deteriorating as well. Instead of increasing private funding for basic rotocraft R&D, U.S. industry spending has fallen off, too. A reduction in federal funding is matched by a corresponding decrease in industry funding. Companies have little incentive to fund basic research on their own, because capital markets and stockholders shy away from these investments with their indeterminate returns."

Yet, on the other hand, the foreign governments are significantly increasing their investment in rotocraft research, and that is why companies like Eurocopter, Augusta and others are making significant headway in denying the market to our companies.

In fact, Mr. Chairman, we used to have four major rotocraft producers in America. We are now down to three, and if we don't help reverse this difficult trend, you are going to see that industrial base shrink to two. We don't want to see that happen. This allows for a planned, coordinated effort to increase funding in rotocraft research, and I ask my colleagues to support this amendment.

Ms. LOFGREN. Would the gentleman yield for a question? You mentioned the closure, or proposed closure of the wind tunnels at NASA Ames which did concern me, since we have made substantial public sector investments to create state of the art wind tunnels, and I was stunned when the proposal was to close them after we spent all that money recently just to build them. The answer we got was that they would do everything with computer modeling and they didn't need the wind tunnels, which I must admit, I was somewhat skeptical about, so I guess question #1 is could we do wind—modeling rather than these centers, and question #2, if we need the centers, can we utilize as part of your plan, or do you envision that these investments, that NASA Ames might be part of what you are doing?

Mr. WELDON. Well, the gentlelady asks a very important question. I have gone on the record publicly opposing NASA Ames' decision to shut down the infrastructure facilities at NASA Ames. It is a preliminary decision that will not take full force and effect for one year. This initiative, if we put it forward in this legislation, I think will send a signal to NASA that they are going in the wrong direction. In talking to the scientists and the leaders of the major helicopter manufacturers, they say there is a role for computerized simulation, but that does not replace the need for the kind of capabilities at NASA Ames, which are the largest wind tunnels.

Ms. LOFGREN. Right.

Mr. WELDON. Of their type in the world.

Ms. LOFGREN. Yes.

Mr. WELDON. And so hopefully, this will help us turn around that decision and the lady—gentlelady has my full support to continue the pressure on NASA Ames to reverse that decision over the next year. It is only a partial decision. They have not yet——

Ms. LOFGREN. Thank you for your—the answer.

Mr. FORBES. Once again, the Chair is prepared to accept this amendment and hopes it will be adopted. Is there any further discussion? If no, the vote occurs on the amendment. All in favor, say aye. Those opposed, say no. The ayes have it, and the amendment is agreed to. The next amendment on the roster is Amendment 3, offered by Mr. Moore from Kansas. Are you ready to proceed with your amendment?

Mr. MOORE. I—are we on 2734, Mr. Chairman?

Mr. FORBES. Yes, sir. The——

Mr. MOORE. Unanimous consent to withdraw the amendment I had proposed.

Mr. FORBES. Without objection, consent is given to withdraw the amendment. The next amendment on the roster is Amendment #4,

offered by Ms. Jackson Lee from Texas. Are you ready to proceed with your amendment?

Ms. JACKSON LEE. I am, Mr. Chairman.

Mr. FORBES. The Clerk will report the amendment.

Ms. TESSIERI. Amendment to H.R. 2734 offered by Ms. Jackson Lee of Texas.

[Amendment to H.R. 2734 offered by Sheila Jackson Lee appears in the Appendix.]

Mr. FORBES. And I ask unanimous consent to dispense with the reading. Without objection, it is so ordered. Ms. Jackson Lee is recognized for five minutes——

Ms. JACKSON LEE. Thank you.

Mr. FORBES. ——to offer her amendment.

Ms. JACKSON LEE. Thank you very much, Mr. Chairman. Right now, FAA rules require that U.S. commercial airline pilots retire at the age of 60. The reasoning is that as people get older, their mental and physical faculties decay to a level that they pose a safety risk in flight. All of us would be concerned if that was actually the case. However, these are the more experienced pilots in the fleet. By FAA rules, they have a comprehensive medical exam twice per year. They have regular tests on the state of the art computer flight simulators to make sure their skills are sharp, and however, regardless of their experience level or safety record or health status, they are forced to give up their careers at the age of 60.

My amendment is simple, because I recognize, Mr. Chairman, that there are a wide breadth of opinions on this, and I respect all of the opinions that have been offered, but I think this would be very instructive, if we were to have an amendment that asks the FAA to assess why pilots flying international can be over 60 and those flying within the United States under FAA rules cannot. What is the distinction? This is a very finite, very precise study. It will provide information to us to ensure that we give a fair hearing to everyone's point of view, and might I say on the record, Mr. Chairman, one of the concerns of the FAA is the time in which they take to do studies, or the resources that might be utilized, I have made sure that this is such a narrow area of focus that this can be done with the most fiscally conservative resources that one might use and, I would hope, that as we explore this question, as I understand the Transportation Committee will be holding hearings, that none of this will be limiting the Transportation Committee from having a broad view of this question, so maybe we can answer it once and for all.

If the answer proves that we should remain with the 60 cap, 60-year-old cap, all of us who are concerned about safety would readily support this enthusiastically. If we show that there are some other options, I think this Committee should be aware of it. With that, I ask my colleagues to support this amendment and I yield back.

Mr. FORBES. Is there any further discussion? If no, the vote occurs on the amendment. All in favor say aye. Those opposed, say no. The ayes have it and the amendment is agreed to. Are there any further amendments? Hearing none, the question is on the bill, H.R. 2734, the *Federal Aviation Administration Research and Development Reauthorization Act,* as amended. All those in favor will

say aye. All those opposed will say no. In the opinion of the Chair, the ayes have it. I will now recognize Mr. Hall to offer a motion.

Mr. HALL. Mr. Chairman, I move that the Committee favorably report H.R. 2734, as amended, to the House with the recommendation that the bill, as amended, do pass. Furthermore, I move that staff be instructed to prepare the legislative report and make necessary technical and conforming changes, and that the Chairman take all necessary steps to bring the bill before the House for consideration.

Mr. FORBES. The question is on the motion to report the bill favorably. Those in favor of the motion will signify by saying aye. Opposed, no. The ayes appear to have it and the bill is favorably reported. Without objection, the motion to reconsider is laid upon the table. I move that members have two subsequent calendar days in which to submit supplemental, minority, or additional views on the measure. I move pursuant to Clause 1 of Rule 22 of the Rules of the House of Representatives that the Committee authorize the Chairman to offer such motions as may be necessary in the House to go to conference with the Senate on the bill H.R. 2734 or a similar Senate bill. Without objection, so ordered.

[Whereupon, the Committee proceeded to other business.]

Appendix

H.R. 2734 (AS INTRODUCED), AMENDMENT ROSTER, AMENDMENTS, SUBCOMMITTEE MEMORANDUM, COMMITTEE PRINT, SECTION-BY-SECTION ANALYSIS

I

108TH CONGRESS
1ST SESSION

H. R. 2734

To authorize appropriations for the civil aviation research and development projects and activities of the Federal Aviation Administration, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JULY 15, 2003

Mr. FORBES (for himself, Mr. ROHRABACHER, Mr. LARSON of Connecticut, and Mr. GORDON) introduced the following bill; which was referred to the Committee on Science

---

A BILL

To authorize appropriations for the civil aviation research and development projects and activities of the Federal Aviation Administration, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Federal Aviation Administration Research and Development Reauthorization Act".

SEC. 2. AUTHORIZATION OF APPROPRIATIONS.

Section 48102(a) of title 49, United States Code, is amended—

(1) by striking "to carry out sections 44504" and inserting "for conducting civil aviation research and development under sections 44504";

(2) by striking "and" at the end of paragraph (7);

(3) by striking the period at the end of paragraph (8) and inserting a semicolon; and

(4) by adding at the end the following new paragraphs:

"(9) for fiscal year 2004, $371,317,000, including—

"(A) $190,000,000 for Research, Engineering, and Development, of which—

"(i) $65,000,000 shall be for Improving Aviation Safety;

"(ii) $24,000,000 shall be for Weather Safety Research;

"(iii) $15,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and

Development program under such section 3;

"(iv) $27,500,000 shall be for Human Factors and Aeromedical Research;

"(v) $30,000,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;

"(vi) $7,000,000 shall be for Research Mission Support;

"(vii) $20,000,000 shall be for the Airport Cooperative Research Program; and

"(viii) $1,500,000 shall be for carrying out subsection (h) of this section;

"(B) $163,900,000 for Facilities and Equipment, of which—

"(i) $42,800,000 shall be for Advanced Technology Development and Prototyping;

"(ii) $30,300,000 shall be for Safe Flight 21; and

"(iii) $90,800,000 shall be for the Center for Advanced Aviation System Development; and

"(C) $17,417,000 for Airport Improvement Program Research and Development, of which—

"(i) $9,667,000 shall be for Airports Technology-Safety; and

"(ii) $7,750,000 shall be for Airports Technology-Efficiency;

"(10) for fiscal year 2005, $396,192,000, including—

"(A) $206,600,000 for Research, Engineering, and Development, of which—

"(i) $65,705,000 shall be for Improving Aviation Safety;

"(ii) $24,260,000 shall be for Weather Safety Research;

"(iii) $30,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Genera-

tion Air Traffic Management Research and Development program under such section 3;

"(iv) $27,800,000 shall be for Human Factors and Aeromedical Research;

"(v) $30,109,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;

"(vi) $7,076,000 shall be for Research Mission Support;

"(vii) $20,000,000 shall be for the Airport Cooperative Research Program; and

"(viii) $1,650,000 shall be for carrying out subsection (h) of this section;

"(B) $172,000,000 for Facilities and Equipment, of which—

"(i) $43,300,000 shall be for Advanced Technology Development and Prototyping;

"(ii) $31,100,000 shall be for Safe Flight 21;

"(iii) $95,400,000 shall be for the Center for Advanced Aviation System Development; and

"(iv) $2,200,000 shall be for Free Flight Phase 2; and

"(C) $17,592,000 for Airport Improvement Program Research and Development, of which—

"(i) $9,764,000 shall be for Airports Technology-Safety; and

"(ii) $7,828,000 shall be for Airports Technology-Efficiency; and

"(11) for fiscal year 2006, $412,157,000, including—

"(A) $228,289,000 for Research, Engineering, and Development, of which—

"(i) $66,447,000 shall be for Improving Aviation Safety;

"(ii) $24,534,000 shall be for Weather Safety Research;

"(iii) $50,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation

Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

"(iv) $28,114,000 shall be for Human Factors and Aeromedical Research;

"(v) $30,223,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;

"(vi) $7,156,000 shall be for Research Mission Support;

"(vii) $20,000,000 shall be for the Airport Cooperation Research Program; and

"(viii) $1,815,000 shall be for carrying out subsection (h) of this section;

"(B) $166,100,000 for Facilities and Equipment, of which—

"(i) $42,200,000 shall be for Advanced Technology Development and Prototyping;

"(ii) $23,900,000 shall be for Safe Flight 21; and

"(iii) $100,000,000 shall be for the Center for Advanced Aviation System Development; and

"(C) $17,768,000 for Airport Improvement Program Research and Development, of which—

"(i) $9,862,000 shall be for Airports Technology-Safety; and

"(ii) $7,906,000 shall be for Airports Technology-Efficiency.".

SEC. 3. NEXT GENERATION AIR TRAFFIC MANAGEMENT RESEARCH AND DEVELOPMENT JOINT PROGRAM OFFICE.

(a) ESTABLISHMENT.—There is established a Next Generation Air Traffic Management Research and Development Joint Program Office (referred to in this section as the "Office"). The Office shall be jointly managed by the Federal Aviation Administration and the National Aeronautics and Space Administration. The objective of the Office shall be to carry out research and development of an air traffic management system designed to meet national long-term aviation security, safety, and capacity needs.

(b) DIRECTOR AND DEPUTY DIRECTOR.—The Office shall be headed by a Director who shall be a senior executive of the Federal Aviation Administration. The Deputy Director shall be a senior executive of the National Aeronautics and Space Administration. Not later than 120 days after the date of enactment of this Act, the Administrators of the Federal Aviation Administration and the National Aeronautics and Space Administration shall jointly appoint the Director and Deputy Director of the Office.

(c) FUNCTIONS OF THE OFFICE.—The Office shall manage air traffic management research and development programs and initiatives within the Federal Aviation Administration and the National Aeronautics and Space Administration. The responsibilities of the Office shall include—

(1) establishing and managing a research and development program for a next generation air traffic management system capable of tripling capacity by the year 2025;

(2) entering into grants, cooperative agreements or contracts, or otherwise awarding or using funds appropriated for air traffic management research and development to carry out paragraph (1);

(3) utilizing the facilities, capabilities, expertise, and experience of Federal agencies, national laboratories, universities, nonprofit organizations, industrial entities, and other non-Federal entities to carry out paragraph (1);

(4) coordinating with the Department of Defense, the Department of Commerce, the Under Secretary for Science and Technology at the Department of Homeland Security, the National Security Council, the Department of Transportation, and other Federal agencies; and

(5) consulting with the private sector (including representatives of general aviation, commercial aviation, and the space industry), members of the public, and other interested parties on the program.

(d) NEXT GENERATION AIR TRAFFIC MANAGEMENT RESEARCH AND DEVELOPMENT PLAN.—

(1) REQUIREMENT.—The Office shall develop a research and development plan to carry out this section.

(2) GOAL.—The goal of the plan shall be to enable the creation of a National Airspace System architecture that would—

(A) be based on emerging ground-based and space-based communications, navigation, and surveillance technologies;

(B) increase the level of safety, security, and efficiency of the National Airspace System;

(C) integrate data and information flow effectively with other Federal agencies responsible for providing for our Nation's defense and security;

(D) be scalable to accommodate and encourage substantial growth in domestic and international transportation;

(E) anticipate and accommodate continuing technology upgrades; and

(F) accommodate a wide range of aircraft operations, including airlines, air taxis, helicopters, general aviation, and unmanned aerial vehicles.

(3) CONTENTS.—The plan shall describe, at a minimum—

(A) the most significant technical hurdles that stand in the way of achieving the goal described in paragraph (2);

(B) the research and development projects that will be carried out to overcome the tech-

nical hurdles described in subparagraph (A), including, for each project, whether it would be funded by the Federal Aviation Administration, the National Aeronautics and Space Administration, or both, and whether the work would be carried by the Federal Government, corporations, or universities, or a combination thereof;

(C) the annual anticipated cost of carrying out the plan;

(D) the technical milestones that will be used to evaluate progress in carrying out the plan; and

(E) how the research and development activities will be coordinated with other appropriate Federal agencies.

(e) REPORTS.—The Director of the Office shall transmit to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate—

(1) not later than 120 days after the date of enactment of this Act, the plan required under subsection (d); and

(2) annually at the time of the President's budget request, a report describing the progress in

carrying out the plan required under subsection (d) and any changes to that plan.

SEC. 4. BUDGET DESIGNATION FOR RESEARCH AND DEVELOPMENT ACTIVITIES.

Section 48102 of title 49, United States Code, is amended by inserting after subsection (f) the following new subsection:

"(g) DESIGNATION OF ACTIVITIES.—(1) The amounts appropriated under subsection (a) are for the support of all research and development activities carried out by the Federal Aviation Administration that fall within the categories of basic research, applied research, and development, including the design and development of prototypes, in accordance with the classifications of the Office of Management and Budget Circular A–11 (Budget Formulation/Submission Process).

"(2) The Department of Transportation's annual budget request for the Federal Aviation Administration shall identify all of the activities carried out by the Administration within the categories of basic research, applied research, and development, as classified by the Office of Management and Budget Circular A–11. Each activity in the categories of basic research, applied research, and development shall be identified regardless of the budget category in which it appears in the budget request.".

SEC. 5. AIRPORT COOPERATIVE RESEARCH PROGRAM.

Section 44511 of title 49, United States Code, is amended by adding at the end the following new subsection:

"(f) AIRPORT COOPERATIVE RESEARCH PROGRAM.—

"(1) ESTABLISHMENT.—The Secretary of Transportation shall establish an airport cooperative research program to—

"(A) identify problems that are shared by airport operating agencies and can be solved through applied research but that are not being adequately addressed by existing Federal research programs; and

"(B) fund research to address those problems.

"(2) GOVERNANCE.—The Secretary of Transportation shall appoint an independent governing board for the research program established under this subsection. The governing board shall be appointed from candidates nominated by national associations representing public airport operating agencies, airport executives, State aviation officials, and the scheduled airlines, and shall include representatives of appropriate Federal agencies. Section 14 of the Federal Advisory Committee Act shall not apply to the governing board.

"(3) IMPLEMENTATION.—The Secretary of Transportation shall enter into an arrangement with the National Academy of Sciences to provide staff support to the governing board established under paragraph (2) and to carry out projects proposed by the governing board that the Secretary considers appropriate.".

SEC. 6. DEVELOPMENT OF ANALYTICAL TOOLS AND CERTIFICATION METHODS.

The Federal Aviation Administration shall conduct research to promote the development of analytical tools to improve existing certification methods and to reduce the overall costs for the certification of new products.

SEC. 7. RESEARCH ON AVIATION TRAINING.

Section 48102(h)(1) of title 49, United States Code, is amended—

(1) by striking "or" at the end of subparagraph (B);

(2) by striking the period at the end of subparagraph (C) and inserting "; or"; and

(3) by adding at the end the following new subparagraph:

"(D) research on the impact of new technologies and procedures, particularly those related to aircraft flight deck and air traffic man-

agement functions, on training requirements for pilots and air traffic controllers.".

○

COMMITTEE ON SCIENCE
FULL COMMITTEE MARKUP
July 22, 2003

AMENDMENT ROSTER

H.R. 2734, Federal Aviation Administration Research and Development Reauthorization Act

--Motion to adopt the bill, as amended: agreed to by a voice vote.
--Motion to report the bill, as amended: agreed to by a voice vote.

No.	Sponsor	Description	Results
1.	Mr. Matheson	Amendment adds a new provision to the next generation air traffic management R&D program specifying the plan shall take into consideration noise pollution reduction.	--Adopted by a voice vote.
2.	Mr. Weldon	Amendment provides funding for the Rotocraft Research and Development Initiative.	--Adopted by a voice vote.
3.	Mr. Moore	Amendment permits flexibility of between 50-90 percent for federal cost share for centers of regional excellence.	--Unanimous consent request to withdraw the amendment; agreed to by a voice vote.
4.	Ms. Jackson Lee	Amendment adds a new section to the bill – Sec. 8--Pilot Retirement Age Study.	--Adopted by a voice vote.

AMENDMENT TO H.R. 2734

OFFERED BY MR. MATHESON

Page 11, line 14, strike "and".

Page 11, line 18, strike the period and insert "; and".

Page 11, after line 18, insert the following new subparagraph:

(G) incorporate noise pollution reduction concerns.

AMENDMENT TO H.R. 2734

OFFERED BY MR. WELDON OF PENNSYLVANIA

At the end of the bill, insert the following new section:

SEC. 8. ROTORCRAFT RESEARCH AND DEVELOPMENT INITIATIVE.

(a) OBJECTIVE.—The Administrator of the Federal Aviation Administration shall establish a rotorcraft initiative with the objective of developing, and demonstrating in a relevant environment, within 10 years after the date of the enactment of this Act, technologies to enable rotorcraft with the following improvements relative to rotorcraft existing as of the date of the enactment of this Act:

(1) 80 percent reduction in noise levels on takeoff and on approach and landing as perceived by a human observer.

(2) Factor of 10 reduction in vibration.

(3) 30 percent reduction in empty weight.

(4) Predicted accident rate equivalent to that of fixed-wing aircraft in commercial service within 10 years after the date of the enactment of this Act.

(5) Capability for zero-ceiling, zero-visibility operations.

(b) IMPLEMENTATION.—Within 180 days after the date of the enactment of this Act, the Administrator of the Federal Aviation Administration, in cooperation with the Administrator of the National Aeronautics and Space Administration, shall provide a plan to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate for the implementation of the initiative described in subsection (a). The implementation plan shall include—

(1) technological roadmaps for achieving each of the improvements specified in subsection (a);

(2) an estimate of the 10-year funding profile required to achieve the objective specified in subsection (a);

(3) a plan for carrying out a formal quantification of the estimated costs and benefits of each technological option selected for development beyond the initial concept definition phase;

(4) a plan for transferring the technologies to industry, including the identification of requirements for prototype demonstrations, as appropriate;

(5) a plan to perform rotorcraft system architecture studies to identify revolutionary technologies for future investments in research and development: and

(6) a plan to increase the use of vertical-take-off-and-landing vehicles to improve transportation service in urban areas.

(c) FUNDING AGREEMENTS.—The Administrator of the Federal Aviation Administration shall enter into appropriate funding agreements with other Federal agencies and departments linked to national rotorcraft industry and academic research and development.

(d) CENTER FOR ROTORCRAFT TECHNOLOGY.—The Federal Aviation Administration is authorized to contribute up to $5,000,000 for the operation of a center for rotorcraft technology to house a research, testing, and training facility and administrative center in the vicinity of existing helicopter manufacturing and research for the purpose of improving upon and developing new rotorcraft technologies, new design capabilities, and manufacturing techniques, including the objectives described in subsection (a), led by helicopter manufacturers, the maintenance industry, retrofitters, universities, and industry suppliers.

(e) AUTHORIZATION OF APPROPRIATIONS.—In addition to amounts authorized to be appropriated by the amendments made by this Act, there are authorized to be appropriated to the Administrator of the Federal Aviation Administration to carry out this section—

(1) $40,000,000 for fiscal year 2004;

(2) $40,000,000 for fiscal year 2005;

(3) $40,000,000 for fiscal year 2006;

(4) $50,000,000 for fiscal year 2007; and

(5) $70,000,000 for fiscal year 2008.

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AMENDMENT TO H.R. 2734
OFFERED BY MR. MOORE

At the end of the bill, insert the following new section:

SEC. 8. CENTERS OF EXCELLENCE.

Section 44513(f) of title 49, United States Code, is amended by striking "is 50 percent" and inserting "shall be between 50 and 90 percent".

AMENDMENT TO H.R. 2734

OFFERED BY MS. JACKSON-LEE OF TEXAS

At the end of the bill, insert the following new section:

SEC. 8. PILOT RETIREMENT AGE STUDY.

The Administrator of the Federal Aviation Administration shall conduct a research study of whether commercial airline pilots between the ages of 60 and 64 who are employed by foreign air carriers pose a significant safety risk to United States passengers and airspace. The Administrator shall transmit the results of the study to the Congress not later than 6 months after the date of the enactment of this Act.

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE
SUITE 2320 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6301
(202) 225-6371
TTY: (202) 226-4410
http://www.house.gov/science/welcome.htm

Memorandum

To:	Chairman Boehlert
From:	Chairman Rohrabacher
Subject:	Subcommittee Markup of the Committee Print, the "Federal Aviation Administration Research and Development Reauthorization Act"
Date:	July 9, 2003

I am pleased to report that on June 26, 2003, the Subcommittee on Space and Aeronautics favorably reported the "Federal Aviation Administration Research and Development Reauthorization Act" out of subcommittee with three amendments. The Subcommittee passed all amendments and the legislation by voice vote.

Ranking Member Gordon offered an amendment to expand eligible research projects conducted by undergraduate and technical colleges by authorizing research on the impact of new technologies and procedures on training requirements for pilots and air traffic controllers. His amendment authorized spending to support this initiative in the following amounts: $1.5 million in FY04; $1.65 million in FY05; and $1.815 million in FY06.

Rep. Weiner offered an amendment to authorize spending for noise and emissions research and development from FAA's Research, Engineering, and Development account. The committee print, as drafted, authorized noise and emissions research spending from the Airport Improvement Program account.

Finally, your amendment was accepted that directed the National Academy of Sciences to provide staff services to the governing board of the Airport Cooperative Research Program.

COMMITTEE PRINT

SHOWING THE FAA RESEARCH AND DEVELOPMENT REAUTHORIZATION ACT AS AMENDED BY THE SUBCOMMITTEE ON SPACE AND AERONAUTICS ON JUNE 26, 2003.

SECTION 1. SHORT TITLE.

This Act may be cited as the "Federal Aviation Administration Research and Development Reauthorization Act".

SEC. 2. AUTHORIZATION OF APPROPRIATIONS.

Section 48102(a) of title 49, United States Code, is amended—

(1) by striking "to carry out sections 44504" and inserting "for conducting civil aviation research and development under sections 44504";

(2) by striking "and" at the end of paragraph (7);

(3) by striking the period at the end of paragraph (8) and inserting a semicolon; and

(4) by adding at the end the following new paragraphs:

"(9) for fiscal year 2004, $371,317,000, including—

"(A) $190,000,000 for Research, Engineering, and Development, of which—

"(i) $65,000,000 shall be for Improving Aviation Safety;

"(ii) $24,000,000 shall be for Weather Safety Research;

"(iii) $15,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

"(iv) $27,500,000 shall be for Human Factors and Aeromedical Research;

"(v) $30,000,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;

"(vi) $7,000,000 shall be for Research Mission Support;

"(vii) $20,000,000 shall be for the Airport Cooperative Research Program; and

"(viii) $1,500,000 shall be for carrying out subsection (h) of this section;

"(B) $163,900,000 for Facilities and Equipment, of which—

"(i) $42,800,000 shall be for Advanced Technology Development and Prototyping;

"(ii) $30,300,000 shall be for Safe Flight 21; and

"(iii) $90,800,000 shall be for the Center for Advanced Aviation System Development; and

"(C) $17,417,000 for Airport Improvement Program Research and Development, of which—

"(i) $9,667,000 shall be for Airports Technology-Safety; and

"(ii) $7,750,000 shall be for Airports Technology-Efficiency;

"(10) for fiscal year 2005, $396,192,000, including—

"(A) $206,600,000 for Research, Engineering, and Development, of which—

"(i) $65,705,000 shall be for Improving Aviation Safety;

"(ii) $24,260,000 shall be for Weather Safety Research;

"(iii) $30,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

"(iv) $27,800,000 shall be for Human Factors and Aeromedical Research;

"(v) $30,109,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community

exposure to civilian aircraft noise or emissions;

"(vi) $7,076,000 shall be for Research Mission Support;

"(vii) $20,000,000 shall be for the Airport Cooperative Research Program; and

"(viii) $1,650,000 shall be for carrying out subsection (h) of this section;

"(B) $172,000,000 for Facilities and Equipment, of which—

"(i) $43,300,000 shall be for Advanced Technology Development and Prototyping;

"(ii) $31,100,000 shall be for Safe Flight 21;

"(iii) $95,400,000 shall be for the Center for Advanced Aviation System Development; and

"(iv) $2,200,000 shall be for Free Flight Phase 2; and

"(C) $17,592,000 for Airport Improvement Program Research and Development, of which—

"(i) $9,764,000 shall be for Airports Technology-Safety; and

"(ii) $7,828,000 shall be for Airports Technology-Efficiency; and

"(11) for fiscal year 2006, $412,157,000, including—

"(A) $228,289,000 for Research, Engineering, and Development, of which—

"(i) $66,447,000 shall be for Improving Aviation Safety;

"(ii) $24,534,000 shall be for Weather Safety Research;

"(iii) $50,000,000 shall be made available to the Next Generation Air Traffic Management Research and Development Joint Program Office established under section 3 of the Federal Aviation Administration Research and Development Reauthorization Act for the Next Generation Air Traffic Management Research and Development program under such section 3;

"(iv) $28,114,000 shall be for Human Factors and Aeromedical Research;

"(v) $30,223,000 shall be for Environmental Research and Development, of which $20,000,000 shall be for research activities related to reducing community exposure to civilian aircraft noise or emissions;

"(vi) $7,156,000 shall be for Research Mission Support;

"(vii) $20,000,000 shall be for the Airport Cooperation Research Program; and

"(viii) $1,815,000 shall be for carrying out subsection (h) of this section;

"(B) $166,100,000 for Facilities and Equipment, of which—

"(i) $42,200,000 shall be for Advanced Technology Development and Prototyping;

"(ii) $23,900,000 shall be for Safe Flight 21; and

"(iii) $100,000,000 shall be for the Center for Advanced Aviation System Development; and

"(C) $17,768,000 for Airport Improvement Program Research and Development, of which—

"(i) $9,862,000 shall be for Airports Technology-Safety; and

"(ii) $7,906,000 shall be for Airports Technology-Efficiency.".

SEC. 3. NEXT GENERATION AIR TRAFFIC MANAGEMENT RESEARCH AND DEVELOPMENT JOINT PROGRAM OFFICE.

(a) ESTABLISHMENT.—There is established a Next Generation Air Traffic Management Research and Development Joint Program Office (referred to in this section as the "Office"). The Office shall be jointly managed by the Federal Aviation Administration and the National Aeronautics and Space Administration. The objective of the Office shall be to carry out research and development of an air traffic management system designed to meet national long-term aviation security, safety, and capacity needs.

(b) DIRECTOR AND DEPUTY DIRECTOR.—The Office shall be headed by a Director who shall be a senior executive of the Federal Aviation Administration. The Deputy Director shall be a senior executive of the National Aeronautics and Space Administration. Not later than 120

days after the date of enactment of this Act, the Administrators of the Federal Aviation Administration and the National Aeronautics and Space Administration shall jointly appoint the Director and Deputy Director of the Office.

(c) FUNCTIONS OF THE OFFICE.—The Office shall manage air traffic management research and development programs and initiatives within the Federal Aviation Administration and the National Aeronautics and Space Administration. The responsibilities of the Office shall include—

(1) establishing and managing a research and development program for a next generation air traffic management system capable of tripling capacity by the year 2025;

(2) entering into grants, cooperative agreements or contracts, or otherwise awarding or using funds appropriated for air traffic management research and development to carry out paragraph (1);

(3) utilizing the facilities, capabilities, expertise, and experience of Federal agencies, national laboratories, universities, nonprofit organizations, industrial entities, and other non-Federal entities to carry out paragraph (1);

(4) coordinating with the Department of Defense, the Department of Commerce, the Under Secretary for Science and Technology at the Department of Homeland Security, the National Security Council, the Department of Transportation, and other Federal agencies; and

(5) consulting with the private sector (including representatives of general aviation, commercial aviation, and the space industry), members of the public, and other interested parties on the program.

(d) NEXT GENERATION AIR TRAFFIC MANAGEMENT RESEARCH AND DEVELOPMENT PLAN.—

(1) REQUIREMENT.—The Office shall develop a research and development plan to carry out this section.

(2) GOAL.—The goal of the plan shall be to enable the creation of a National Airspace System architecture that would—

(A) be based on emerging ground-based and space-based communications, navigation, and surveillance technologies;

(B) increase the level of safety, security, and efficiency of the National Airspace System;

(C) integrate data and information flow effectively with other Federal agencies responsible

for providing for our Nation's defense and security;

(D) be scalable to accommodate and encourage substantial growth in domestic and international transportation;

(E) anticipate and accommodate continuing technology upgrades; and

(F) accommodate a wide range of aircraft operations, including airlines, air taxis, helicopters, general aviation, and unmanned aerial vehicles.

(3) CONTENTS.—The plan shall describe, at a minimum—

(A) the most significant technical hurdles that stand in the way of achieving the goal described in paragraph (2);

(B) the research and development projects that will be carried out to overcome the technical hurdles described in subparagraph (A), including, for each project, whether it would be funded by the Federal Aviation Administration, the National Aeronautics and Space Administration, or both, and whether the work would be carried by the Federal Government, corporations, or universities, or a combination thereof;

(C) the annual anticipated cost of carrying out the plan;

(D) the technical milestones that will be used to evaluate progress in carrying out the plan; and

(E) how the research and development activities will be coordinated with other appropriate Federal agencies.

(e) REPORTS.—The Director of the Office shall transmit to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate—

(1) not later than 120 days after the date of enactment of this Act, the plan required under subsection (d); and

(2) annually at the time of the President's budget request, a report describing the progress in carrying out the plan required under subsection (d) and any changes to that plan.

SEC. 4. BUDGET DESIGNATION FOR RESEARCH AND DEVELOPMENT ACTIVITIES.

Section 48102 of title 49, United States Code, is amended by inserting after subsection (f) the following new subsection:

"(g) DESIGNATION OF ACTIVITIES.—(1) The amounts appropriated under subsection (a) are for the support of all research and development activities carried out by the Federal Aviation Administration that fall within the categories of basic research, applied research, and development, including the design and development of prototypes, in accordance with the classifications of the Office of Management and Budget Circular A–11 (Budget Formulation/Submission Process).

"(2) The Department of Transportation's annual budget request for the Federal Aviation Administration shall identify all of the activities carried out by the Administration within the categories of basic research, applied research, and development, as classified by the Office of Management and Budget Circular A–11. Each activity in the categories of basic research, applied research, and development shall be identified regardless of the budget category in which it appears in the budget request.".

SEC. 5. AIRPORT COOPERATIVE RESEARCH PROGRAM.

Section 44511 of title 49, United States Code, is amended by adding at the end the following new subsection:

"(f) AIRPORT COOPERATIVE RESEARCH PROGRAM.—

"(1) ESTABLISHMENT.—The Secretary of Transportation shall establish an airport cooperative research program to—

"(1) identify problems that are shared by airport operating agencies and can be solved through applied research but that are not being adequately addressed by existing Federal research programs; and

"(B) fund research to address those problems.

"(2) GOVERNANCE.—The Secretary of Transportation shall appoint an independent governing board for the research program established under this subsection. The governing board shall be appointed from candidates nominated by national associations representing public airport operating agencies, airport executives, State aviation officials, and the scheduled airlines, and shall include representatives of appropriate Federal agencies. Section 14 of the Federal Advisory Committee Act shall not apply to the governing board.

"(3) IMPLEMENTATION.—The Secretary of Transportation shall enter into an arrangement with the National Academy of Sciences to provide staff support to the governing board established under

paragraph (2) and to carry out projects proposed by the governing board that the Secretary considers appropriate.".

SEC. 6. DEVELOPMENT OF ANALYTICAL TOOLS AND CERTIFICATION METHODS.

The Federal Aviation Administration shall conduct research to promote the development of analytical tools to improve existing certification methods and to reduce the overall costs for the certification of new products.

SEC. 7. RESEARCH ON AVIATION TRAINING.

Section 48102(h)(1) of title 49, United States Code, is amended—

(1) by striking "or" at the end of subparagraph (B);

(2) by striking the period at the end of subparagraph (C) and inserting "; or"; and

(3) by adding at the end the following new subparagraph:

"(D) research on the impact of new technologies and procedures, particularly those related to aircraft flight deck and air traffic management functions, on training requirements for pilots and air traffic controllers.".

Section-by-Section of the Federal Aviation Administration R&D Reauthorization Act (as amended by the Subcommittee)

Sec. 1. Short Title

"Federal Aviation Administration Research and Development Reauthorization Act."

Sec. 2. Authorization of Appropriations

Authorizes appropriations for Federal Aviation Administration (FAA) Research and Development programs, projects and activities for Fiscal Years 2004 – 2006.

Program Account	FY03 Actual	FY04 Request	FY04 Auth.	FY05 Auth.	FY06 Auth.
Research, Engineering & Development	$147.5M	$100.0M	$190.0M	$206.6M	$228.3M
Facilities and Equipment*	$177.5M	$163.9M	$163.9M	$172.0M	$166.1M
Airport Improvement Program*	$ 0.0M	$ 17.4M	$ 17.4M	$ 17.6M	$ 17.7M
Total	**$325.0M**	**$281.3M**	**$371.3M**	**$396.2M**	**$412.2M**

*Research and development projects and activities only.

Sec. 3. Next Generation Air Traffic Management Research and Development Joint Program Office

Requires FAA and the National Aeronautics and Space Administration (NASA) to establish a Joint Program Office (JPO) to conduct Next Generation Air Traffic Management research and development. Requires the FAA and NASA Administrators to jointly appoint an FAA senior executive to be Director, and a NASA senior executive to be Deputy Director.

Requires the JPO to establish and carry out, on behalf of FAA and NASA, long-term air traffic management R&D capable of tripling our domestic capacity by 2025. The JPO is authorized to spend agency funds dedicated to air traffic management R&D on behalf of NASA and FAA. Authorizes the JPO to use the facilities and expertise of other Federal agencies, national laboratories, universities, non-profit organizations, and private sector entities.

Requires the JPO to develop a research and development plan with cost and schedule milestones. Requires the JPO to make annual reports to Congress on progress to date, compliance with milestones, and program plans for the following year.

Authorizes a total of $95 million over three years.

Sec. 4. Budget Designation for Research and Development Activities

Amends 49 USC 48102 (FAA Research and Development), to require future FAA budgets to identify all research and development activities that would be classified as basic research, applied research, or development under the guidelines established by the Office of Management and Budget Circular A-11, regardless of the budget category in which it appears in the budget request.

Sec. 5. Airport Cooperative Research Program

Requires the Secretary of Transportation to establish an airport cooperative research grant program to identify problems – shared by airport operating agencies – that can be solved through applied research, and to fund research addressing those problems.

Requires the Secretary to appoint a governing board from candidates proposed by national associations representing airport executives, public airport operating agencies, State aviation officials, and the scheduled airlines. Requires the Secretary to enter into an arrangement with the National Academy of Sciences to provide staff support to the governing board. The board will solicit, review and propose airport R&D projects. The Secretary will review and approve projects for funding.

Authorizes $20 million annually from the Research, Engineering and Development account.

Sec. 6. Development of Analytical Tools and Certification Methods

Directs FAA to conduct research to promote development of analytical tools to improve existing certification methods for new aircraft, engines, and aircraft systems, to reduce overall certification costs for new products.

Sec. 7. Research on Aviation Training

Authorizes research on the impact of new technologies and procedures on training requirements for pilots and air traffic controllers, to be conducted through the research grants program for undergraduate and technical colleges.